

GREAT LAKES TECHNOCRAT

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PUBLISHED BY SECTION 1, R. D. 8741, TECHNOCRACY INC.

25c

Volume III

Number 9

25c

GREAT LAKES TECHNOCRAT

MARCH-APRIL, 1946 ★ VOL. III ★ NO. 9 ★ WHOLE NO. 78

Illustrating the Futility of Price System Methods of Operation; Interpreting the Trend of Events from the Social Aspects of Science; and Presenting the Specifications for Total Mobilization for Peace!

— THE STAFF —

Managing Editor.....R. B. Langan Circulation.....Emilie Gifford
Assistant Editor.....Anne Laurie Research.....R. F. Novalis
Treasurer.....W. T. Slack

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"Entered as second class matter June 2, 1943, at the Post Office at Chicago, Illinois, under the Act of March 3, 1879."

Great Lakes Technocrat is a publication of Section 1, R. D. 8741. Technocracy Inc. Published bi-monthly at 843 Belmont Ave., Chicago 14, Illinois. Single Copies 25c. Subscription rates in U. S. A. \$2.50 for 12 issues, 6 issues, \$1.25; in Canada, \$2.75 and \$1.40. Bundle rates 10 to 100, 20 cents per copy; more than 100 copies, 19 cents each, add 10 percent to bundle rates in Canada; 5 percent discount for cash with order on bundle rates only. Special rate to libraries, anywhere in North America, \$1.00 for 6 issues. Continental Headquarters of Technocracy Inc. is at 155 E. 44th St., New York 17, N. Y. Send all correspondence and manuscripts and make all money payable to Great Lakes Technocrat, 843 Belmont Ave., Chicago 14, Ill. Printed in U.S.A.

TECHNOCRACY LITERATURE

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TECHNOCRACY DIGEST

Roll Your Own, Joe!

America Has Plenty of Makings

A Treatise for the Guidance of those Aspiring to Live Off
the Sweat of the Other Fellow's Brow. Quick and Easy
Method—How to Organize—How to Operate.

By H. V. Wilkie, 8342-1

In these postwar days there is a great deal of 'study' being given to the subject of accumulating data and suggestions on a variety of business enterprises from which returning soldiers, or any one who happens to be looking over their shoulder, can get himself set up in something neat and attractive in the chiseling line. This 'down to earth' study for the aspiring ex-G.I. (and the guy looking over his shoulder) avoids all the customary moral, political and economic balderdash with which other 'studies' are loaded. It goes straight to the point, i.e., 'In what line will it be the easiest for me to chisel the most out of society and at the same time get away with giving back the least in return?'

That is the genuine spirit of 'free enterprise.' Why waste time clouding the issue or trying to camouflage the 'take?' In these few remaining 'latter days' of the Price System, a guy has got to get on the beam quick if he wants to belong to the blessed, microscopic minority who rest so softly on top of the social dung heap. Ain't it a fact?

What's Your Racket, Bub?

For the earnest student wishing to learn how to go about breaking into the charmed circle, nothing could be more helpful than to take a look at the methods and accomplishments of others. If you can establish a control over something that people can't live without, you have what is technically known as a 'red hot.' Next in line of descent would be control of what they think they can't live without. Then, what you can make them think they can't do without. After that, what will give them amusement or enjoyment. Next, what will protect them from harm. Following that, what you can make them think will protect them from harm. And, lastly, that ancient but still profitable line,

future salvation on a pay now and collect later basis. The above list is fundamental. No attempt has been made to make it exhaustive, or to subdivide the different headings into their many branches and off-shoots.

The name that has come to be most commonly applied to the business of exploiting the profit possibilities in these fields is 'racket.' A nice definition of a racket is: Any operation wherein an individual or group can take a cut off the needs, wants, desires or fears of their neighbors. Rackets have flourished proportionately with the growth in complexity of the social structure. In examining some prominent examples, the order in which they are presented need be no indication of their seniority.

Food, being necessary to life, constitutes a very meaty racket, and is referred to as 'a honey.' This is called the 'food racket' among the boys who congregate around the terminal warehouses. In this same category are clothing, shelter, health, education, transportation, communication, etc. The items people think they can't do without vary with customs, seasons and traditions. A good example of what you can make them think they can't do without is the current ballyhoo on vitamins. The list is long but this example suffices. And so on through the various categories.

From the simple process of supplying the primary needs of the earliest groups of people, there evolved such big operations as Standard Brands, Uneeda Biscuit, American Woolen, American Sugar, U.S. Rubber, Standard Oil, etc. The technique of all these operations is to make the package neat and attractive and pass out as small an amount of utility as possible for as great a price as the traffic will bear. Generally speaking, if it were possible to sell empty packages with no utility whatsoever, there would be no broken corporate hearts.

Let's Look the Field Over

In the matter of selling future salvation, one of our most honored activities, the field is by no means exhausted with the well-established institutions. It is a dull day when some one somewhere doesn't bring out a new brand of salvation with varying degrees of success. To become a 'New Messiah' or "Seventh Angel" requires only a vacant store, some sex appeal, the guts of a brass monkey and plenty of imagination.

Along with the growth of the salvation and subsistence business, there also developed what is known as the

'Service' occupation. This is a field of absolutely unlimited opportunity. Any new way that you can think of for doing something in this complex social maze of ours which people are too indolent, bewildered, busy or afraid to do for themselves, is bound to ring the bell. Many examples of how this luscious racket operates can be given. The lawyer can extract anywhere from one hundred dollars to a thousand dollars for drawing up a simple bill of divorce, sending a will over to probate, or thousands of other little acts that seem mysterious and amazing.

The legal profession has the charming attribute of dealing with people at a time when they are peculiarly helpless and emotionally befuddled. Thus the hapless victim finds himself with his life, his reputation, but more particularly his wordly goods, at its complete mercy. Think quickly, how many lawyers do you know who have lived a life of ease just milking one estate, or drawing up ironclad contracts for one corporation, or breaking ironclad contracts for another.

This is a range of opportunity limited only by the imagination of the operator. Since practicing (?) the 'law' unfolds such prizes, what more natural than to move in on the prerogative of making the law? No wonder Congress is often called a Soviet of lawyers.

Let Us Prey, Brethren!

Hush ye merry men in your rollicking! Have ye no hearts? Let us give thanks to the author of such beneficence! But who is the author? Surely we need another patron Saint in the calendar. Who should it be but Beelzebub himself, who leads men's feet astray and into our mystic maze? Nay, wait, the name's ob-

scure, let's shorten it to Boob. That's it—St. Boob—the author and founder of our art, for where would we be were it not for the great American Boob.

The lure here is admittedly dazzling but the competition is stiff and only the stout hearted get a firm seat on this bandwagon. A major output of all public and especially parochial colleges are contestants in this juicy plum department. Such endowed institutions specialize in turning out double-edged sharpies who swing a mean blade in the legal joustings. They are also properly indoctrinated to bridge the gap leading to ecclesiastical dominance in the educational field.

Sweetest Racket of All

Somewhere in the Elysian Fields there sits a king wearing a crown, a ten-pointed crown adorned with dazzling jewels. This king sits in eternal bliss, strumming the strings of a golden harp and humming softly the while, his whole being bathed in the sunshine of perfect content.

He invented the insurance racket! Ah me! 'Why didn't I think of that?' The dream that plagues the heart of every free aspiring free enterpriser is the dream of a racket operated on a 100 percent nothing for something basis. Rating high in this category are the Labor Union, the Pressure Group, Charity, Bootlegging, Hi-Jacking, Murder, Inc., and so on. One great drawback with many items in this bracket is that they are frowned on by the legal gents we have visited just above. They demand an inordinately heavy cut out of the pickings and even play rough, to the extent that occasionally some of the more vulgar and less accomplished operators find themselves in the 'Hoose Gow' or on the 'hot seat.'

Not so with the insurance game. It is respectable. It is staffed with gents who are polished and adroit. In its inception it ranked with the Confidence and Badger Games in what we righteously call 'outright swindles' and its great field was the uncultured and uncouth. The technique in the early stages was to keep practically all of the 'take' with only an occasional pay back of a few shekels with great publicity, just to sweeten up the pot. In their advertising today, the offspring of these lusty buccaneers use a hangover of the same tactics. They ballyhoo loudly how much they have paid back to the policy holders in the last forty years, or graphically depict their agent paying off poor widow Brown the thousand dollars that saved her from a life of shame.

This high spirited and carefree method went along swimmingly until a little after 1900 when *Collier's Weekly* with its expose, plus the Kemble cartoons, threw a cold analytical eye not only on insurance but on the food and drug rackets as well. The newspapers took it up and the resultant din stung our lawmakers into framing a batch of statutes, laying an even heavier hand on the practice of corporate vice.

It was thus, my kiddies, that thousands of our now most respected business institutions had a sudden change of heart, foresaking the black flag of piracy for the lacy mantle of 'free enterprise.' By assiduous application of the chiselers' ingenuity, the new front of chastity yields an even greater bounty than the old. Insurance as a whole now gives back 10 percent, 20 percent or even fifty percent of the 'take' and finds itself the very center of rockribbed respectability. It is still strictly nothing for something, because the only thing they have invested is the effort of selling the

great American Boob the idea that he is not competent to take care of his own money. How would you like to think up a little doosie like that?

A. B. C.'s of Chiseling

At this point, let's examine the fundamentals of 'free enterprise.'

The one basic attribute of business is to gain control of something that somebody else *wants* or needs. A prime consideration is that you will fulfill this *want* only on payment to you of your price. Therefore, the first care of every business man is to see that no one gets something for nothing. Paradoxically the best bait an enterpriser can use to snare fish (shall we say suckers) into his commercial net is to infer or even declare that he is passing out something for nothing. The insatiable appetite of the Great American Boob for this kind of bait explains the undiminished prosperity of the numbers racket, gambling, fire sales, auctions and Friday bargains, not forgetting to mention Bingo, the darling of every parish priest.

There are several schools of thought on the subject of just how to ooze, squeeze, inject or force oneself into a position of control and its concomitant of levying tribute, i.e., fee, profit, split, rake off, shakedown. Many favor the direct action method of simply moving in and taking over. This sometimes requires a little rough work, for which, fortunately, there is usually a plentiful supply of dim-witted plug-uglies. This method gained a quiet popularity as the social picture in America gradually congealed, and the oldfashioned flim-flam, three card monte and stock swindle, those sucker trimming rackets of an expanding economy ran out their string.

Prohibition, and the consequent

heavy booty available through supplying illicit liquor for illicit thirsts, provided a romantic outlet for the initiative of folks subscribing to the direct action school of thought. This activity also was popular with police, custom and internal revenue agents throughout the land. Many a deserving public servant now leads a life of peaceful retirement today in some quiet nook or (due to lead poisoning) reposes with his ancestors, depending largely on how skillful he was in estimating the size of the bite from which he could separate the prime operators.

'Do It First and Do It Often'

Regardless of one's individual viewpoint, it must be admitted that for sheer initiative, these enterprisers have seldom been excelled. Bootlegging, although a fairly substantial objective in itself, served also as a springboard for leaping into almost every conceivable kind of profitable commercial activity. Of course these rough and ready entrepreneurs dispensed with the usual preliminaries of opening up shop and cultivating a patronage. Wherever their eyes lit on a successful nightclub, labor union, string of bawdy houses, hat check concession, taxi stand, private detective agency, protective association or sales agent, direct action was employed. They politely but firmly invited the occupant to move over, or out. It was a case of either accepting the unrivalled opportunity to acquire a highly functional partner or becoming an expropriator. The fate of those who demurred only served to heighten the general impression of high business acumen in accepting such invitations.

Al Capone became the legendary hero in this realm, and after years of hustle and bustle lives in quiet seclusion in a fifty room Florida castle,

complete with private yacht, lakes and all the fixin's. Al was out of circulation for a little while due to a little miscalculation about cutting the Washington boys in on his 'take.' He learned that it is bad business to hold out on these past masters in the gentle art of the shakedown.

The above is offered as analysis only, and not necessarily for emulation, because this field is fairly well nailed down by rugged individualists whose habit it is to forcefully repel intrusion. This does, not, however, slam the door of opportunity on private enterprise, since every little while there emerges some clever new device for putting on the squeeze.

Closely akin to such extra-legal activities, and not to be overlooked by the diligent student of ways and means, is the law enforcement angle. Since all human law is a species of blackmail ('you do what I say or else'), it is no more than natural that law enforcement should come to be by lineal descent the daddy of all shakedown rackets. No analysis is required here, since it must be self-evident that no commercialized vice can exist without the implicit consent of that branch of the constabulary whose business specifically is to prohibit such nefarious practices in a given area.

Since our purpose is to suggest some sort of satisfactory occupation to ex-members of the Armed Forces or any one else seeking a few fatherly hints on the facts of 'free enterprise,' let's glance at a few more intriguing devices for accumulating exchangeable currency before we proceed to examine a few probable solutions to the problem.

Whet Your Appetite on This!

From a simple printed notice of the arrival of a shipload of goods or

the offer to buy or sell a cow evolved that rose-colored world within a world, the advertising business. It is elementary that merchants even 'away back when' should find these notices more effective in luring the gullible when garnished with a little stretching of the truth or a few intimations not strictly in line with the facts. This lesson learned, it was only a few easy steps until these notices began to dominate the pages of every periodical published, not to mention fence posts, tree trunks, barns, out-houses, etc.

Now here is the point for the sharp student to grasp. Some bright boy went to the publishers and told them he could greatly increase their advertising patronage if they would give him a 15 percent discount on all ads placed by him. He then went to the merchants or manufacturers and told them he would make market surveys, edit and prepare copy and all sorts of other services (all for nothing) if they would turn over to him the prerogative of placing their advertising. Since the more space he could induce his clients to buy, the more commission he collected from the publishers, he put himself in the middle of some very handsome pickings. He was the father of the advertising agency. Thus was a forced draft put under the business of making 'everybody on Earth dissatisfied and wanting something else.'

The fact that publishers quickly learned their real business was the distribution of advertising is not surprising, when it is noted that the revenue from display space far exceeds all other income. If, in carrying on this business, they find it convenient to suppress or distort news or information offensive to advertisers, we should not be too hasty in condemnation for

what we don't know probably won't hurt us anyhow.

Bounteous Bereavement

When this fleshy structure we call the body parts company with its soul, mind, or spirit or whatever we choose to call the Life principle, the resultant mass is known in trade parlance as a cadaver. Its tendency to decay and become obnoxious poses a problem open to a number of solutions. If the environment abounds with scavenger birds or animals, removal of the remains to a sufficient distance to permit these brethren to perform their happy rites, offers a satisfactory disposal with a minimum of effort. Otherwise, burial in the ground or consumption by fire are indicated. At sea, of course, the solution is obvious. All this would have no place in our observations had we not somewhere along the line built up a set of sentimental and superstitious notions concerning the relic of the dear departed. Free Enterprise, quick to sense a golden opportunity, quickly capitalized on this condition by endowing this very necessary disposal with an endless system of rites, ceremonies, trappings and memorials.

The woodworkers, cement, metal, cloth and chemical trades, the florists, printers, stone-cutters, tent makers, auto builders, clergy, plus and double plus the mortician, all take a cut. Even the doctor gets a final fee for a death certificate. This is small enough recompense perhaps for the loss of a solid source of revenue. The innovations in this line have been endless, which should spell opportunity to the aggressive young man with a little imagination and less inhibitions.

Once Over Lightly

Since it is our intent to acquaint ourselves with the general technique

of profitable under takings by scrutinizing a few of them so as to get the hang of things, we should not overlook such steady producers as banking, blackmail, counterfeiting, small loans, money exchanging, etc. Because of the all too present temptation to become poisoned by one's own product, the Booze and Cigarette (plus others tobacco products) rackets have been by-passed. We might note that they employ several hundred thousand persons and several billion dollars of capital in their entirety. In spite of the fact that their entire contribution to the public weal is on the negative side of moral, mental, and physical depravity and disintegration, they are highly regarded socially because their very noxious status makes them open season game for the tax leviers. Because of this they are unwillingly the heaviest contributors to many a state, city and national budget. Temperance and moral uplifters work up hill all the way when they try to kill off the goose that lays this golden egg.

In an early paragraph we touched upon the principles of manufacturing, which can be reduced to the individual producing (as cheaply as possible) something that has eye or gadget appeal and vending it to the surrounding country side.

Not to be overlooked in a survey of this sort is the acquisition of special skills which folks will pay to see or hear you exhibit. Hence, the highly skilled art of purveying entertainment. The general principle of show business is analogous to peeking through the keyhole while someone undresses. For a consideration at the box office, we are permitted to view peoples' most sacred and secret emotions and in the right houses most of their epidermis too. The highway to success along this avenue

is piled high with the blanched bones of hams who saw only a shortcut to fame and fortune, and failed to note the days, hours and years of study, practice and development required for success.

Include Me Out

We could go on like this indefinitely, analyzing rackets and passing out valuable pointers. The list is much too long, however. There is just one further point we would like to call to your attention. That is the real difference between a racket and a legitimate business. The racketeer takes over a line, then builds it into a monopoly; after that he gets himself a private army to brush off and/or rub out competition.

In a so-called legitimate line, the entrepreneur builds up a business. Then he builds a fence around it with high prices, restricted production, buried patents, monopoly control and cartel agreements seasoned with political and legalistic legerdemain. So we see that the real difference between racketeering and good old 'free enterprise is mainly in refinement of methods and who got there first.

It could be that we are in error and that you are not really as keen about climbing aboard some passing racket as the ballyhoo would lead us to believe. When you see the hazy and backhanded way your Government approaches the idea of giving you a lift into business, you might almost think they don't want you there. But then the best they could offer the heroes of the last war was the thinly disguised beggary of selling apples on a corner! Maybe if we simply peeled off a few layers of bad conditioning, weird notions and false concepts, and took a factual look at our environment, we would not fancy

ourselves indulging in any of the behavior patterns we have just examined.

How About The Real McCoy?

In a spirit of adventure, let us suppose that we are going to investigate the real probabilities of our position in the America of the future. After the manner of Columbus, let us turn our backs resolutely on every preconceived notion and let the facts announce themselves as they appear one by one over the horizon of our awakened consciousness.

Turning away from the zany psychological jumble of greed, chaos, absurdity and idiocy which we call politics, finance and business, and training our mental binoculars on our actual physical environment, what do we see? First, we see a land whose fields, forests, mountains and streams possess natural and energy resources equal to the known resources of most of the rest of the world. Wow! The North American Continent has only 10 percent of the world's population and the lion's share of the world's resources. That sounds like luxury! And why not, because the next thing we see is a high energy social pattern, with the installed technology, the engineering skill and the trained personnel capable of producing all the goods and services every American can conveniently consume. A potential abundance is here now, for all.

Let's make believe just a little more, and suppose that we should put these resources and this equipment to use for the purpose for which it is logically intended, i.e., consumption. Today they are used to entrench and maintain a galaxy of anarchistic rackets, each preying on the other, and all leeching on the whole of society.

Is that the limit of human intelligence? Have we gone thus far and struck a dead end? Can't we conceive of ourselves as sufficiently sane to use our resources for the simple physical act of producing and distributing the abundance they portend? Let's go whole hog on this make believe game and suppose that we have enough sense to do just this! Then how would we go about it?

Since this is a physical and not a political or financial sandbagging problem, we would be forced to employ the only method we know for treating physical problems. We would have to use the methods of physical science. Here the one constant is measurement. Using this means, we would find that if we operated our productive capacity on a balanced load basis, we could use only the physical services of our adult manpower four hours a day, four days a week. This is enough work to produce and distribute to every individual resident of this North American Continent all the goods and services he or she can consume.

Accept No Substitutes

Let's get this clearly. *There is no physical reason why any American should be deprived of anything reasonably necessary to his complete well being!* That means complete security from birth to death is physically available here and now. The careful scientific analysis of compilation of data on our physical environment which revealed these facts covered a period of fourteen years of painstaking research by the Technical Alliance of North America (later to become Technocracy Inc.). This organization consisted of a number of engineers and scientists who were sufficiently clear-sighted to recognize that the impact of the vast technology and energy

output which we were pouring into our social mechanism must produce social repercussions.

They analyzed also the Rules of the Game of Price System interference control and made at least one startling discovery, i.e., abundance destroys price. Any attempt to distribute the technological abundance accumulating on this continent, by Price System methods could only lead to progressive disintegration which if permitted to run unchecked would result in chaotic social collapse.

This analysis is factual. It deals with no ideology, wishful thinking or consensus of moronity opinion. It bears no relation to the business and political tripe which the great American Boob is conditioned to gulp down in gargantuan doses without question. It is substantiated by masses of facts which can be verified by any American. In the light of the rapidly developing social instability, the program of Technocracy should be investigated by every American.

IT'S UP TO YOU, JOE

All this brings us rather squarely to the moment of decision. If we look the facts squarely in the face, we find there is a question we must answer. Since the pressure of advancing technology is undermining Business, Politics and Finance, why bother to have any part in the decadent rackets which we have just now so gently touched upon. Let's shoot the works in our make believe and suppose that we go 'all out' to usher in the age of abundance which is knocking so loudly at our door. Then what?

Wouldn't you rather have the abundance and security that can be provided from birth to death for every citizen and that would be guaranteed by the entire power of

the social structure than the dubious dabbling in uncertain rackets that now characterizes this dying economic order. Look at the government's figures on income distribution and you can easily calculate your chances to chisel your way into the blessed minority on top of the social dung heap. The odds are terrific and they get steeper all the time.

Why be a piker in the richest Continent on earth? Why settle for less than the whole hog? Why battle around with cheap perilous rackets

when the greatest land the Sun shines upon is waiting to throw its beneficence into your lap? Face up to the fact that the Price System is on its last legs. The New America of Abundance rises shining with a brilliance almost beyond description just over the threshold. It's a fact, brother,

If you face toward the future instead of the past, you will then be one with that happy band of sturdy pioneers, the Technocrats. They are doing just that. Well, why not? Investigate Technocracy!

Moral: Don't Be A Little Guy

'The very first law passed in 1619 by the Virginia House of Burgesses fixed the price of tobacco—the money of the Colony. Wives and daughters drove into Jamestown with a wagon load of tobacco to do their shopping.

'By 1639 the price of tobacco fell so low that the Burgesses passed a law to burn half the crop. . . . Creditors got 40 pounds for each 100 lbs. of (tobacco) debt.'—From 'The Romance of Money' feature in *The Numismatic Scrapbook Magazine*. (Italics ours)

Metal Pull Toys, the kind children want and can't get, go begging in Chicago. The toys were made by three veterans with a sharp eye on the Christmas trade. But the manufacturers made one mistake. They made the toys too good. Stores, which previously had shown a keen interest, changed their minds when they got a look at the first 20,000 that were turned out. The stores told the veterans they could not afford to take the loss involved in dumping stocks of wooden toys which would become unsalable as soon as the superior metal toys were put on the shelves. (*Wall Street Journal*, December 13, 1945.)

'Trucks and busses aren't wearing out the way they should, the Society of Automotive Engineers was told today at its annual meeting here. The group was told it should prepare "wear" standards to guide fleet managers who are confused by vehicles which run for hundreds of thousands of miles, spurning time, distance and wear.

'Gavin W. Laurie of the Atlantic Refining Co., Philadelphia, said preventive maintenance keeps trucks in safe operating condition for more than a decade and a million miles. He said reasons other than mechanical failure and wear must be found for retiring them.'—(*Chicago Daily News*, January 8, 1946.)

'Sure, when I deliver lectures I say crime doesn't pay. But that's for the little guy. For him, crime doesn't pay. But it's asinine to say crime never pays. I know too much about how some big businesses have been built up. I wouldn't ever say anything as silly as that.'—Joseph R. 'Yellow-Kid' Weil, the veteran international con man (now ex), whose police dossier goes back to 1905. (*Chicago Times*, December 28, 1945.)

The Valor of 'Free Enterprise'

Lets All Play Santa Claus

By Herb Robbins, 8439-1

Oh, Promise Me!

Sixty million jobs! This is the goal of our national leaders in the postwar era, a goal set up by a political promise on the eve of a national election. Well, it seems the promise was taken in good faith by a majority of Americans, who now expect the politicians to deliver. So, all right, that shouldn't be so tough, as it merely depends on what you care to define as a 'job.' The N.A.M. has taken a survey of private manufacturing and business concerns, and reports that we need have no fears in this regard, as industry in the past has always furnished one-fourth of all jobs, and will in postwar times be able to furnish better than one-fourth of 60,000,000 jobs, so there! Just as simple as that.

Reams of paper have been used to print the opinions, views and hallucinations of our tycoons of business, politicians and economists on this subject. No attention, however, is paid to the physical factors which will dictate the outcome of the whole mess. They 'view with alarm' the prospect that 60,000,000 Americans aren't going to be able to work like hell for one-third of their whole day, but fail to give any reason for this stand, other than the fact that 'Free Enterprise' cannot survive otherwise. Shades of Simon Legree! Better get away from that corpse, boys, it's getting ready to blow up in your faces from too much 'pump priming.'

Get wise to yourselves and understand that Technology will dictate the postwar status of 'jobs.' Being a com-

posite of physical phenomena under strict control of physical laws, technology is not amenable to the principles of democracy.

You know, of course, what Technology is. It is well represented in the shiny new machines which have been installed by the thousands in machine tool plants. It is visible to the naked eye in the South, where the new cotton pickers are already at work displacing men, women and children in the fields. You may have driven over some of it in an automobile if you have been on the roadways running over our immense power-dams. You will find it in the steel industry; in the office; in the coal fields; on the farms. Technology, that magnificent instrument of production of physical wealth, has become the dictator of America's destiny. It says to Americans 'Throttle me and you shall starve; operate me and you must find some way to distribute the abundance which I create, for I have replaced your customers.'

Forward, March—To Chaos

Being no respecter of persons, it cares not who holds the title of ownership, for it will work only according to its design and is unaffected by majority votes. What a boon to the Free Enterprisers if their views and hopes could regulate the velocity of Technology in its ever accelerating approach to its pre-determined impact on the rotted corpse of 'business.' If the politicians believe they can provide 'jobs' for the millions of people who have been displaced by Technology in this country, let them remember that these millions will constitute a political

majority, holding the political lives of the politicians in their hands, and they had better be jobs which carry remuneration equal to or better than that provided by private business. Under such conditions, one could improve one's social standing by going on the W.P.A.

Some of the plans to employ 60 million people in America in postwar times have reached that point of desperation wherein the authors can be accused of plotting a conspiracy against the American people tantamount to national treason. Mr. Henry Kaiser, that tycoon of business, recently suggested that America ship all of its rolling stock to war-torn Europe, thus enabling our steel mills and other shops to operate at capacity in replacing this equipment. We suppose that Mr. Kaiser is cognizant of the fact that this is a tremendous tonnage of steel to be taken from our dwindling stock of iron ore. Other propositions are coming across the board in rapid fire order to give America away to all comers. Of course, this will be accomplished through the expedient of making 'loans' to the respective recipients of our 'export humanitarianism.'

The statements of some of our national political and business leaders resound with exhortations to the dear public to 'preserve Free Enterprise' or we are lost. What a damning indictment of democracy this must be to the millions of men in our Armed Forces, who fought and died all over the world to defeat the military might of Fascism, to realize that our own fascist elements at home are planning to give away (for free) the resources which the foreign fascists have been planning for years to grab by force. This is to be done at the expense of American taxpayers, American living standards. We cannot slice our cake that thin without also eating a thin slice. It is

quite the time for Americans to regard national wealth in its correct aspect, for we are going to look mighty silly sitting here on a Continent denuded of oil, iron and other metals, each clutching in his hands a bundle of debt certificates, payable on demand or at some future date. What the hell do these monkeys think a high energy civilization runs on, paper?

Blessed Are The Peacemakers

Sixty million jobs in America will mean 60,000,000 suckers finally reduced to the level of China's 450,000,000 coolies. America's virgin timber is 80 percent gone. Free Enterprise has been here. In order to survive the last two decades in America, Free Enterprise has had to ship out of the country ever-increasing amounts of our natural resources in raw and finished stages, in exchange for gold, and other worthless items, so we could have 'jobs.' Yes, we must have jobs to support the Free Enterprisers in their respective rackets of piling up debt claims against the general public, while they beat their breasts and yell 'democracy!' What democracy, may we ask? United States is a Federal Republic, and as such can harbor any form of government by the people of themselves.

We have never approached a democracy in this country, for no ordinary citizen of the great mass of Americans is ever permitted to vote for or against any fundamental issue concerning his or America's welfare. We have, for many years now, been 'sold down the river' by the oligarchs in order to maintain for ourselves that doubtful privilege of competing for an ever diminishing supply of 'jobs.' Faced with a gigantic unpaid leisure class after this war, the only out that the oligarchs can devise is to rehabilitate the world, industrialize the 'backward' nations with our immense surpluses of

machine tools and other technological devices. This is to be done in order to maintain peace in the future. Page Homer Lea and 'The Valor of Ignorance.'

Where are these 'backward' nations to obtain the energy to operate a civilization above that of European peasants? Obviously from us. In what form? Our oil supply has diminished to the point where it is now necessary to 'mine' it by digging a shaft down and under the oil-bearing sands and allowing them to drain through holes drilled upward. In Canada, a method is used whereby exposed beds of oil-bearing sands are steam-jet drilled and broken up to be transported to flotation cells, where the mixture of sands and hot water is forced into the bottom of quiet tanks of water, where the oil rises to the top. The 'black gold' of the Empire

Builders has dwindled to a strategic key resource. If consumption of oil in this country alone is continued at the present rate for much longer, we are not going to have enough to lubricate the machinery needed to install the hydro-electric dams which will be needed to furnish the energy for industrial operation.

Americans cannot ignore these physical factors, if we expect to survive as a nation. There is one way, and one way only, to stop this last wild fling of the Free Enterprisers. Technocracy's program of Total Mobilization for Peace will prevent our irreplaceable natural resources from being shipped out of the country. Shall we lose our national heritage in order that the Free Enterprisers may for a short while maintain the dying Price System?

Investigate Technocracy!

This Guy Is In A Real Mess

Someone had wired a Government bureau asking whether hydrochloric acid could be used to clean a given type of boiler tube. The answer was: 'Uncertainties of reactive processes make use of hydrochloric acid undesirable where alkalinity is involved.' The inquirer wrote back, thanking the bureau for the advice, saying that he guessed he would use hydrochloric acid. The bureau wired him: 'Regretable decision involves uncertainties. Hydrochloric acid will produce submuriate invalidating reactions.' Again the man wrote thanking them for their advice, saying that he was glad to know that hydrochloric acid was all right. This time the bureau wired in plain English: 'Hydrochloric acid,' said the telegram, 'will eat hell out of your tubes.'—Camp Livingstone Communique (*Reader's Scope*, January 1946.)

'He weighs 150 pounds, dies at 53 years of age, spends one-third of his life sleeping, is 67 inches tall, has a brain weight of 1,300 grams, and his pulse beats at the rate of 70 a minute. He has a 7,500 word vocabulary, leaves school at the eighth grade, and has a mental age of 14 years. He has a flat chest, round shoulders, and protuberant paunch. He is a mimicking monkey whose wisdom or intelligence is patterned by the copybook maxims of his school days.'—Dr. H. L. Hollingshead, professor of psychology at Columbia University. (As quoted in *The Messenger*, November 1945.)

'At present the ordinary man has the choice between being a wage slave and a scoundrel.' Betty Grable, movie actress (as quoted in the *American Freeman*, March 1946.)

Flashes of American History

No. 1. Shays' Rebellion in 1786

By Ben H. Williams, 8141-15

This is the first of a series of articles which originally appeared in 8141, the predecessor of Great Lakes Technocrat. The series deals with various significant points in the development of the United States as it progressed from a handicraft-agrarian stage to a more complex industrial culture.

The Price System has seen to it that every American is well indoctrinated with the hatchet and cherry tree version of our history. This type of miseducation contributes mightily to the maintenance of the status quo. It's a part of the Propaganda of the Price System.

Maybe, however, you are one who wants to know the right answers. If so, here are some facts of our National History. More will follow. This series consists of glimpses of, and sidelights on, the physical history of America. That is our real story as a nation.

Shays' Rebellion quite properly may be labeled 'the first social upheaval in United States history.'

Like most events of significance in a social sense, its meaning has been largely cast into obscurity, hidden behind the veil of a purely 'political' or an equally one-sided 'personality' approach to historical events. Like all other social disturbances in American history, it was primarily economic in origin, development and outcome. The underlying causes are best made clear by examining briefly the historic setting of the early post-Revolutionary period.

Post-Revolutionary United States

The formal treaty of peace with Great Britain in 1782, found the thirteen American colonies in a demoralized state. Trade with the West Indies and with Europe was at a standstill, with the British blockade still in force. Currency of gold and silver was practically non-existent and the various issues of Continental cur-

rency inflated to the point where one dollar in silver was worth \$120.00 in paper, and taxes had to be paid in hard money. Universal indebtedness based upon pre-war money evaluations added to the difficulty of collecting either interest or principal, while the laws against debtors enabled their creditors to seize their property for any part of the debt, or to remand to prison the debtors themselves until such time as they or their relatives or friends met the obligation.

These laws extended to delinquent taxes as well as to other debts. The concentration of debt claims in the hands of loan and mortgage sharks and speculators in securities in the larger towns and cities brought about antagonism of an acute form between them and thousands of farmers and laborers of the back counties. Most of these farmers and laborers were returned soldiers who had just made America safe for 'life, liberty, and the pursuit of happiness'; who had successfully resisted 'unjust taxation' by Great Britain and now found them-

selves facing debtors' prison for inability to pay 'just taxes' imposed by their fellow patriots. They saw these prisons day by day swallowing up hundreds of their relatives and friends, many of whom died therein of diseases due to overcrowding, insanitation, and starvation. Their farms and homes were mortgaged to greedy security holders, who had legal power not only to take away their property but to slam their persons into prison as well. Employment was impossible to obtain, owing to general industrial and commercial paralysis; while surplus farm crops, unable to find markets, rotted in barns. Contrary to popular notions prevalent at the present day, this was a nearly universal status of the American Republic at the period of its birth and early infancy.

It was no accident that the State of Massachusetts became the stamping ground for that reaction against these conditions known to history as Shays' Rebellion, any more than it was an accident that the early events of the Revolutionary outbreak against Great Britain occurred in the same area. Massachusetts was more advanced in an economic sense than any of the other colonies. Boston was both the largest and most flourishing of the commercial centers. Its merchants and privateersmen had made fortunes in 'rum, molasses, and black ivory' (negro slaves). Fishing, shipping, and ship-building had attained an advanced stage of development up to the outbreak of the Revolutionary war. Manufactories were springing up in Massachusetts to a greater extent than elsewhere in the Colonies. Consequently, the economic paralysis following the war hit that State hardest of all. Massachusetts found her slow yet certain emergence from the ox-cart stage suddenly checked, and re-

acted accordingly. Social action battered at the walls of economic maladjustment.

Origin and Course of the Rebellion

Initial bombardments of the discontented agrarians, from 1782 on, took the form of petitions to the legislatures and courts for a redress of grievances. Remains of the British feudal code, as above indicated, still clung to the jurisprudence of the newborn Republic, while caste lines between elements of the American population were strong. These caste distinctions had not been wiped out by the mere declaration of human equality, nor by the eight years' war for independence. Merchants, money-lenders, and their henchmen the lawyers, sheriffs and bailiffs, were in control of courts and legislatures. Many of these 'big-bugs' not only were in the habit of expressing contempt for the common people in words, but, after the peculiar caste fashion in feudal England in all relationships growing out of trade, employment, and jurisprudence, the common people were studiously treated as inferiors.

Getting no results from petitions, the rising tide of agrarian discontent quickly assumed a more militant form. Lawyers and judges subservient to the money sharks were denounced as enemies of the people. The larger merchants of Boston were condemned as 'importers of luxuries' and as would-be 'aristocrats.' 'Their (the rebels') creed,' wrote Henry Knox to George Washington, 'is that the property of the United States has been protected from the confiscation of Britain by the joint exertions of all, and therefore ought to be the common property of all.' However far this notion of 'common property' may have spread, the fact remained that the people daily saw their individual

properties confiscated through court action and the liberty of their persons threatened through the same agencies.

Direct action or open rebellion broke out in central and western Massachusetts in 1786, under the ostensible though little-coordinated leadership of Daniel Shays, a former captain in the Revolutionary army—'of doubtful reputation,' certain historians add, without further specification. Anyone who remembers what happened to the reputation of Thomas Paine at the hands of the prejudiced religious zealots, will be suspicious of this disqualification regarding Daniel Shays by equally prejudiced descendants of the would-be 'aristocrats' of 1786. Whatever 'doubt' may be cast upon his reputation as an officer in the Revolutionary army, Shays in the rebellion conducted himself as a true captain; he was the 'last to leave the ship.'

The strategy of the rebels was direct and clean-cut, consisting in the main of armed and mostly successful attempts to prevent the courts from sitting pending legislative redress. In addition, jails were broken into and debtors released. Villages and towns were occupied by armed rebels, and 'leading citizens' deposed from power or held as hostages. Boston was never penetrated by the rebels, nor were threats against the nearby courts at Cambridge and Concord carried out.

By certain historians much has been made of the alleged clemency of the 'constituted authorities' toward the 'misguided rebels'; that is, of the reluctance of the former to employ drastic methods against the 'mob.' The movement was not officially declared a 'rebellion' until the moment of its collapse a year from its inception, while the leaders, some of whom were court-martialed and sentenced to the

gallows, were subsequently pardoned, including Shays himself.

The facts, however, do not sustain this legend of clemency due to the 'humane' characteristics of the 'aristocrats.' Their 'clemency,' on the contrary, was quite obviously based upon fear, both for the time being and for the future. The rebellion unquestionably had the backing of the overwhelming body of the people, including most of the troops sent by Governor Bowdoin into the back counties to put it down. It also had the sympathy and support of large numbers of people in the surrounding territories of New Hampshire, Vermont, Connecticut and New York. It was in no sense a revolution, but simply a revolt against a temporary 'bottleneck' of social conditions requiring speedy readjustment and, as such, more than accomplished its avowed purpose. The aftermath of Shays' Rebellion is thus summarized by Thomas Egelston, great-grandson of Major General John Paterson, one of the military leaders in opposition to the rebels:

'After the rebellion was over, the legislature, by carefully prepared enactments, and the courts, by very wise decisions ameliorated the evils as far as it was possible, and the people themselves, by mutual forbearance, diminished the troubles which previous harsh measures had made so grievous. Imprisonment for debt ceased little by little to be the fashion, while laws ameliorating the too harsh relations between debtor and creditor were passed. The farmer saw that whatever else was true, his land could not produce everything that he required to work his farm, or even for his convenience and comfort; that he must purchase certain articles, and that, although these things might be imported, they were not of necessity

articles of luxury and therefore a cause of demoralization. Grievances were adjusted by proper course of law, and the State settled down quietly into a prosperity that it had never known, even in pre-Revolutionary times. Village life became a routine of everyday duties. The town meeting, which had been the safety-valve up to the time of the Revolution, resumed its functions, and peace and quiet reigned throughout the State.'

The Rebellion and the U. S. Constitution

The foregoing by no means tells the whole story. Behind the backs of the bewigged and powdered gentlemen engaged at that very moment in secretly framing a new Constitution for the States, stood the nemesis of Shays' rebel hordes tramping over the fields and through the towns of Massachusetts. These gentlemen of the Constitutional Convention, whom Charles Beard classifies as 'practical men of affairs—holders of state and continental bonds, money lenders, merchants, lawyers, and speculators in the public land'—were unquestionably influenced by events in Massachusetts to compromises and concessions that otherwise would have seemed to them unnecessary. For, in secret (the debates in the Constitutional Convention were not published until 50 years later), they expressed their fear of 'democracy.' Quoting from Beard:

'Almost unanimous was the opinion that democracy was a dangerous thing, to be restrained, not encouraged, by the Constitution, to be given as little voice as possible in the new system, to be hampered by checks and balances. Gerry declared that the evils the country had experienced flowed from "the excess of democracy." Randolph traced the trouble of the past few years to "the turbulence and fol-

lies of democracy.'" Arguing in favor of a life term for Senators, Hamilton exclaimed that "all communities divide themselves into the few and the many. The first are rich and well-born and the other the mass of people who seldom judge or determine right.'" Morris wanted a Senate composed of an aristocracy of wealth to "keep down the turbulence of democracy." Madison, discoursing on the perils of majority rule, stated that their object was "to secure the public good and private rights against the danger of such a faction, and at the same time preserve the spirit and form of popular government."'

In their terror of 'democracy,' the Fathers of the Constitution sought long and earnestly a way out of their difficulties. Among others they considered a 'property qualification' for the suffrage, but decided that the handful of bond-holders and money-lenders would not be sufficient to put the instrument across, since two-thirds of the voters necessary for ratification were farmers. So they dropped that proposal and substituted a three-part system of government: legislative, executive, and judicial, with many checks and balances, but with hazily-defined interrelations, which, Beard declares, has caused the whole world 'to marvel at their dexterity' ever since.

Still, the ghost of Shays' Rebellion would not down. A few years later, the first ten amendments were added to the Constitution—the so-called 'Bill of Rights'—and the United States was then fairly launched on its independent political career. In this manner, political 'wisdom,' as usual, waited upon the reaction to economic development and, then, in its practical applications to the situation, again, as usual, lagged far behind that development.

Shays' Rebellion was the first of

a series of agrarian reactions against the 'vested interests,' social movements leaving a broad trail across the pages of American history.

Meanwhile, at this point, another factor, of deterministic character, enters the picture. It will be considered in its beginnings and some of its subsequent social implications in our next installment under the title 'Whitney's Cotton Gin and Slavery.'

References on 'Shays' Rebellion':

Charles Martyn: 'Life of Artemas Ward.'

Thomas Eggleston: 'Life of John Paterson.'

Edward Bellamy: 'The Duke of Stockbridge.'

Charles and Mary Beard: 'Rise of American Civilization.'

From Here on Out

Keep Your Eye On The Trends

by R. F. Novalis

Increasing Trends..		All-Time LOW	Latest HIGH Figures*
1. DEBT (U. S. Govt.) per person.....	January 1, 1840 0.21		\$1,870.00
2. ENFORCED LEISURE (unemployment.....	October 1944—630,000		1,575,000
3. MACHINE TOOLS in use** (cumulative total).....	1925.....700,000		1,789,500
4. BANK LIQUIDITY (percent deposits to reserves, Federal Reserve Banks).....	1921.....60.0%		98.00%
5. GOVT. (U. S.) BONDS to total bank investments (Federal Reserve Banks).....	1929.....39.0%		93.2 %
6. GOVT. (U. S.) BONDS to total life insurance investments	1915......0005%		60.03%

Decreasing Trends		All-Time HIGH	Latest LOW Figures*
1. PRODUCTION (combined factory-mine-railroad freight) Index basis 1919-20 monthly averages equal 100	Oct.-Nov. 1943—250		199.
2. MAN-HOURS WORKED (total of man-hours in factory-mine-railroad) (Note: 1919-20 monthly average was 2.54 billion) Actual number	Oct.-Nov. 1943 3.14 billion		2.42 billion
3. MAN-HOURS PER UNIT in above industries, combined average	1919-20=100		39%
4. ENFORCED SCARCITY (load factor on installed capacity of above industries)	No Figures		22%
5. INTEREST RATES (combined average yield on Govt.-municipal-corporate bonds)	1919-20 6.12%		1.81%
6. OSCILLATION DOWNWARD of factory output since all-time peak (Oct.-Nov. 1943).....			35%

* September-October, 1945

** No figures available on number of machine tools scrapped

Ed. Note: See January-February "Great Lakes Technocrat" for detailed explanation of this table

* Note: Figure on Item 6 of Decreasing Trends in January-February issue Volume 3, No. 8, page 24 should have read 22½ drop instead of 40.

'One can live forty days without food, four days without water, but only four minutes without air. Which is the more valuable commodity? But air is so abundant it cannot be capitalized and sold. Every commodity made by modern mass production is headed toward the status of air. Sooner or later it will reach a

point where it will not function in a profit economy founded on scarcity, Overproduction, unmanageable surpluses, show that many commodities have already reached that point. It is, then, either a new system consistent with the age of power, or back a hundred terrible years to genuine scarcity. My money is on the new system.'—Stuart Chase.

Inventions + Technology = Less Jobs

By R. A. Seelig

(Condensed from the *Machinists*

Monthly Journal, November, 1945)

In the Graphic Arts Building of the Smithsonian Institution is a display of models of inventions which have changed world history, such as the metal plow, the automobile, the reaper and the airplane. A sign reads: 'Creative inventions make new products and *new industries create employment.*'

The writer of the sign expressed a common belief which has been fostered by much industrial advertising. Opposing such a theory as that embodied in the sign, however, is the fact that an employment breakdown and something approaching national economic collapse came in 1931-32, in an era when scientific progress had reached a new high in world history.

Among inventions that had produced new industries during the preceding 50 years were the automobile, airplane, disk plow, steam turbine, sensitized photographic paper, wireless telegraph and telephone, ductile tungsten for electric filament lamps, high octane gasoline, pneumatic tire, X-ray, internal combustion engine, nitrocellulose lacquers, high pressure lubricants, television, rayon, nylon, wood pulp paper and scores of others.

Inventions Reduce Jobs

The relationship of inventions to unemployment is not fully determined. However, it is clear that inventions and development of new industries do not automatically increase the net amount of employment; otherwise jobs would have been begging for men in 1932-33. There is strong evidence that advancing technology tends to cause a net decrease in employment

because of ability of machines to produce more goods with fewer workers.

'In 1933,' says the National Industrial Conference Board, industry's own spokesman, 'we used fewer man-hours of labor in manufacturing industries than we did in 1899, and in 1938 we fell once more below the 1899 level.' Meanwhile, our population of working age had been increasing more than a half million a year.

Examples of Job Losses

A coal mine employing 800 men installed a loading machine and displaced 500 of them.

In cigar making, four operators with machines produce the equivalent of 15 by hand.

One wrapping machine with one operator replaces as many as 40 hand wrappers.

The steel mills have introduced machinery that permits 1,600 men to do the work formerly done by 32,000.

In railroading, ton-miles have gone up but employment has gone down.

The phenomenal expansion of the aircraft industry after Pearl Harbor was accompanied by a 200 per cent increase in output per man hour.

In 1830 it took 268 man-hours to produce 100 bushels of wheat on five acres; and by 1930 40 man-hours were sufficient to accomplish the same result.

Typical of what is happening on farms, a planter in the Mississippi delta bought 22 tractors and 13 four-row cultivators and dismissed 130 of his 160 share-cropper families.

A Western Union device known as a 'floating switchboard' operated by

six persons, automatically routes telegrams anywhere in a large district, doing the work of 49 persons.

An advertisement of a business machine company states: 'Wrigley cuts force from 100 to 8 girls. Will save for you proportionately.'

An electric eye device inspects automobile engine wrist pins, doing the work formerly done by 10 to 20 persons.

In 59 manufacturing industries, the output per man-hour increased 91 per cent between 1919 and 1938, according to figures taken from a Department of Labor report.

No Limit to Automatic Machinery

The National Resources Committee reported that 'manufacturing, aided by these registering and controlling devices, will develop further toward the straight line process and full automatic operation.'

There is no limit to the possibilities of automatic devices and there is every indication that no matter how much production is increased, employment will tend downward, unless government takes appropriate action. Chief among the actions required is reduction of hours of labor and increase in the hourly wage in order to spread work and maintain purchasing power. Shorter hours and higher wages are not the sole preventive of another depression, but they are basic.

Need to Face Facts

The war provided full employment—temporarily. Current large purchasing power and pent-up demand for goods and services may temporarily provide something near full employment in the immediate postwar period. A permanent solution depends to a large extent upon recognizing the economics of a machine age and distributing work and wages to fit facts.

Machinery manufacturers express fears of attempts to repress new labor-saving devices by tax or other methods. In their literature they picture machine-smashing orgies by excited mobs of displaced workmen in England during the Industrial Revolution.

Machinery Is Beneficial

Inventions are the source of comforts for the common man such as kings of old could not enjoy. Scientific progress and machinery were a prime factor in winning the war. Invention should be stimulated, not curbed.

But the replacement of labor by machinery has accelerated as compared with 50 years ago. The use of machines for producing power in great quantities at low cost is relatively new. More progress has been made in generation of electricity in the past 20 years than in the preceding 2,000, according to General Electric Company. The steam turbine has been developed to a point where it produces a kilowatt-hour of electricity for the burning of less than a pound of coal; and there are engines that develop more than a horsepower per pound of their own weight.

In 1837 only 436 patents were issued. Now 40,000 to 50,000 are issued yearly. The increasing rate of invention goes hand in hand with increase in production per man-hour in agriculture, manufacturing, mining and related industries.

This means that government action to distribute work and income must also be accelerated and become more positive and widespread.

'Knowledge is power,' says an old proverb. Unemployment won't be eliminated unless our people become aware of its basic cause, advancing technology.

My Bonnie Lies Over the Ocean

Foreign Trade—Fact or Fiction

By Sgt. Scoop

If You Sell, You Must Buy

Vice Admiral Emory S. Land, U.S.N. (Retired), Chairman of the United States Maritime Commission, in an article printed in the June 1945 *The Kiwanis Magazine*, stated that: 'Maintenance of full employment is becoming accepted as the primary consideration of national economic policy.'

He writes on the theme that foreign trade carried on by our own merchant marine will contribute largely to this full employment:

Such an increase in foreign trade as the Commission envisages would result in considerably more than the five to six million jobs that directly or indirectly had root in foreign trade and the shipping industry in pre-war years, for shipping requires more men on shore than at sea.

Additional benefit is credited to foreign trade by the Admiral as follows:

In almost every discussion of the post-war period there arises the question of foreign trade. There is unlimited justification for international commerce becoming an important topic, for the flow of commerce between nations is the lifeblood of world amity.

'The lifeblood of world amity'? One may well wonder at this statement, for history records conquest, plundering exploitation, and international wars because of trade, this so-called 'lifeblood of world amity.' If one studies the course of world trade, one studies at the same time, unavoidably, the course of the modern empires, the course of exploitation of

colonial and other subservient peoples, and the course of modern war.

In his article 'A Merchant Marine—As Peace Insurance,' Admiral Land indicates his knowledge of the declining volume of foreign trade, although he reiterates hopes that it would increase greatly after the war. Only as he approaches the end of the article does he make a statement of prime importance, a statement so out of step with the theme of the article as a whole that it glares forth like an accident. This statement is:

The extent to which producers throughout the world find it advantageous to exchange goods is the prime factor that determines the volume of international trade.

This is basic. All the words put forth orally or in writing are but hogwash if they do not conform to the basic question of advantage. Possibly the most straight-to-the-bullseye exposition of the actual situation yet printed is 'The Age of Alchemy,' by Garet Garrett, printed in the *Atlantic Monthly*.

The opening paragraph should send a tremor of death from bow to stern of every one of Admiral Land's postwar ships. It is:

Stated simply, the one most important institution in our complex scheme of material civilization—universal in it—is breaking up before our eyes. World War I rocked it to its foundations; World War II may well finish it. The name of that institution is international trade.

In contrast, Admiral Land states: 'The Commission believes that it

(foreign trade) can be doubled, or even trebled.'

The White Man's Burden

Admiral Land will be sadly disappointed. His anticipated increase in foreign trade will not materialize, and the reason is chemistry. Let us take a few 'for instances' to illustrate the fact that the chemist is figuratively dissolving the postwar merchant marine.

Prior to World War I, ships were busily engaged in transporting nitrates from a Chilean desert to the industrial countries. Germany accumulated huge stockpiles for use as a nitrogen source for explosives. During the first World War, the supply fell far short of needs and the German chemists perfected their methods of getting nitrogen from the air on a large scale. Other nations followed suit; Chilean nitrate shipping was thereby reduced.

Prior to World War II the importation of silk, rubber and quinine from the Orient occupied a portion of the world's merchant marine (foreign ships carried up to 70 percent of our foreign trade). Now our synthetic plants can and do produce as much or more of these products or their substitutes as were formerly imported. Will we abandon our new industries after Peace is declared? These industries are an integral part of the vast developments of science. Our way of life demands that we go forward, not backward.

Much of England's early ascendancy in the field of world trade was due to its textile industries. The raw materials were shipped from such producing areas as India, Egypt, Australia, Canada, Argentina and our own southern States to be processed in English mills. The inexpensive textiles were then marketed throughout the world. This arrangement seemed a

'natural.' It conformed to the theory that certain areas were destined to be producers of raw materials, while other areas were to process the materials with their machines powered by energy from deposits of coal or oil with which the manufacturing areas were fortunately endowed.

This 'natural' is now fighting for survival. Two things happened which upset the arrangement. First, the raw material countries found energy sources and developed the know-how to process their own materials for themselves; second, the chemist produced substitutes that compete on even or advantageous terms with the available products of nature. Witness the growing industrialization and self-sufficiency of Canada, Australia, India, Brazil, South Africa. Witness the development of the synthetic fibers, nylon and rayon, to compete with cotton and silk on such advantageous terms that our national government has chosen to subsidize the growing of cotton.

The Man Who Came To Dinner

The power that lies in the hands of the chemist has been terribly demonstrated by the war making powers of the so-called have-not nations. This power of chemistry is rising throughout the world, transforming an international trade economy into an economy of self-sufficient areas. Garett Garrett refers to this age of wonders as the 'Age of Alchemy.' The chemists, the technologists, the engineers have but begun to transform the economy of the world, and without themselves being economist, politicians, or financiers. The present and impending changes doom world trade as a source of either great profit or appreciable employment.

Before we indulge in attempts to stimulate world trade beyond its natural life, let us note the fateful ex-

ample of Great Britain's position. The expansion of British mercantilism was based on availability of mineral and energy resources for use in industry, the products of which would be sold profitably in world trade. Furthermore, Britain became the world's financial center and a creditor nation.

The war has reversed Britain's financial position. In order to meet war purchases and to keep exchange balances, Great Britain has been compelled to sacrifice practically all of its investments abroad. It has also gone into debt on a huge scale, especially to the Dominions. Exclusive of lend-lease with the U. S. and mutual aid with Canada, Great Britain is already in hock for her total exports, at the prewar rate, for 10 years. If Great Britain is to maintain its prewar export status and pay off its obligations to the bloc currency group alone (dominions exclusive of Canada), her postwar exports of net physical goods must be increased to over 800 million pounds. It is highly improbable that this can be done.

Britain's tin is gone; its copper is gone; the coal mines are going deeper and farther out to sea; the iron mines are going deeper and the ore is becoming poorer. Canada, Australia, South Africa and India are no longer export agrarian economies, but competing export manufacturing economies. The period that made Britain great is gone. Britain grew with the period of world trade and world exploitation. That period is gone, vanquished by the universality of science.

The dependency upon material found in natural existence was a normal step to man's conquest of materials. World trade was part of the mechanics necessary to make materials available for processing and redistribution. Scientists have changed that reliance on naturally existing forms of

matter, and with the change have altered the entire picture of world trade, making Admiral Land's predictions of increased use of the merchant marine for international trade but futile hopes.

Heretofore man has worked with the forms of matter as he has found them, adapting his ends to the limitations of the materials. Now the chemist works on the composition of the matter itself, not just its form, and by changing the nature of the molecule creates forms never found in nature. The many plastics are examples of this progress in science. No longer must ships plow the seven seas for fibers, for instance, when synthetics can be made from sand, coal and air, or many types of vegetable matter.

Science, not world trade, must provide the answer to the problem of full employment after the war. An area economy with scientific utilization of the resources will replace world trade. The way must be pointed out by the men of science, for only they can make a fully employed and prosperous nation after this war.

Instead of chasing after dead ducks like foreign trade, America needs to face its modern social problem in the light of the social aspect of Science. The facts of our problem are at hand. The solution is here. Even the blueprint of social operations is all set to go. In the social mechanics of operating a Continental Area for the benefit of the human components involved lies the answer. Geopolitics is dead. Long live Geotechnics!

Investigate Technocracy

'At every particular moment it is the dead rather than the living who are making history; for politically individuals think dead men's thoughts and pursue dead men's aims.'—Leonard Woolf in *Western Producer*, December 1945. (From Prince Albert, *Saskatchewan Co-Ordinator*, issue No. 29.)

The Answer Is You

A Challenge to All Americans

By Louis Verhovic, 8141-15

How Long Is A Rubber Band?

In the early depression years it was claimed that a federal appropriation of five billion dollars would wreck our economy, yet during the past ten years or so our government has spent money at a rate never before even dreamed possible. In the more recent years, our economists and politicians have assured us that there is nothing to be concerned about with regard to our national debt, that we owe the money to ourselves. This is an asinine misstatement. If we owe the money to ourselves, there is no reason even to keep track of the sums involved. We could merely cancel the whole thing, forget about it, and start all over.

The fact of the situation is that the people who have to pay are not the same as those who receive. In other words, the vast majority of the people owe to the very few. The total amount owed in the Federal debt structure of these United States comes out at about \$1,800 per capita. Very few of us personally know five people who own \$1,800 worth of government bonds. The obvious conclusion is that we do *not* owe the money to ourselves, but we *do* owe the money to the speculators, financiers and investment houses.

In the hopes and plans of the present-day economic and political leaders of America rests the fond dream that the future taxpayers of the country will be the ones to be stuck with the bills. The situation might be ideal except for several factors. Up until Pearl Harbor, American business and politics had but one ideology, God

save business! Then came the war and business and politics repledged and reiterated their loyalty to America. The long-drawn internal feud for profitable markets gave way to a co-operative exploitation of government funds for war production in the guise of patriotism. Factories were built, equipment manufactured, manpower requisitioned to produce the sinews of war, while wages were frozen.

Business complied handsomely (at cost plus), although not too willingly at first. Government assurance of investment safety aided the disciples of the dollar to convert to war production. The pleasant prospect of government subsidy convinced the master minds of industry that they had to produce goods if they were to make money while we were waging a war. Our nation at war conscripted some 12,000,000 men into its Armed Forces. The huge demands of a technological war compelled the producers of war goods to initiate better methods of production. Bonuses were paid for time-saving ideas. Minor adjustments on the machinery made its productivity increase by leaps and bounds.

Technology was installed, modern, automatic equipment which knows only how to produce. Machines in an America at war roared on, with the frozen wages of production workers on the one hand and business patriotism on the other. Thousands of new millionaires were created, while Americans died in the mud of Europe, Asia and the Southwest Pacific. War workers stayed on their frozen jobs with their frozen wages, hoping for an early victory, while business rolled in the luxury of a seller's market.

Rationing came to the people while the newly-made rich wine and dined in the hostelrys and exclusive clubs. The curtain isn't drawn yet, the last act is yet to be played. Technology and energy have yet to play their final role in the national scene.

Picayunish Means Small Scale

The economics involved in producing the materiel of war is of a different nature than that involved in the production of civilian goods. War goods may be destroyed or otherwise rendered useless. They are not consumer goods, and as such are of little or no threat to the economic system, no matter how abundant they become. The only juggling required is that when the warehouses become glutted with the products of America's technology, we must proceed to destroy them (the goods) more rapidly than they are produced, or else put a curb on the production. Numerous plants were shut down while the war was on due to the overproduction of their particular commodities. They simply mass-produced themselves out of existence. A Price System cannot distribute abundance, but knows very well how to restrict it in peace, and destroy it in war!

Theodore Schultz, University of Chicago agricultural economist, asserts that four million farms will produce a third more food in 1950 than did the six million farms prior to the present war. The year 1950 is not so far off. What about the proposals that the veterans of the Second World War rehabilitate themselves on the farms? Political aspirants claim it to be within their power to adjust the social and productive mechanism. Both political parties have assured us that they had the problem in hand.

Are we mad? Don't we recognize that since the turn of the century the proportion of the population engaged in agriculture in the United States has

dropped from about 37 per cent to 20 per cent, in Canada from 40 per cent to 22 per cent? Are we completely bereft of our senses? Aren't the same people who promised us the chicken in every pot and the return to prosperity the very ones who now promise us the glorious postwar America? Are we too stupid to realize that the technological advances which have occurred in industry have also occurred on the farms? Can't we recognize that the layout, operation, production, distribution and processing of farm goods requires a tremendous job of engineering?

It must be pointed out that the discovery of coal had more impact upon civilization than all of the debating, blundering, poor leadership, party favoritism, jingoistic patriotism and congressional spitball throwing by all of our politicians. We must point out that never in America's history have politicians attempted to apply scientific methods of procedure to the solution of America's problems. Politics, as an institution, has no further interest than the maintenance of its own status in our stupid society. As such it never has, does not now and never can provide Americans with anything but the continuance of a social and economic system, which in its very nature is incompetent to deal with the social, economic, philosophical, religious, moral, physical or psychological problems that today confronts the leadership of our Continent.

Make no mistake about it; the answer was *not* given at the polls on the second Tuesday of November, 1944, or on any other election day. The answer lies in America's technology, in America's horsepower. It also lies in America's people, who understand the social mechanism that is required to produce and distribute to all the abundance that America can provide.

From the Camera's Eyeview

Conceived in Energy

We Hold This Truth

The rise of America has been told and retold in song and story. The axe and cherry tree school of chroniclers has labored voluminously, weaving romantic tales. These stories lack conviction because Exhibit A is missing. Behind our traditional facade of individual and minority group struggles for self-advantages an omnipotent physical force has always operated, determining events and motivating men. That force was the impact of the industrial revolution upon this Continent. Its power continues to this day.

America began its career shortly after the first practical energy converting mechanism was put to work in England. With this conquest of extraneous energy human history underwent a major change. The ancient Price System expanded. Discovery and invention flourished. Hand tools and toil gave way to machine manufacture. America, rich in natural resources, forged ahead of the world. By the opening of the 20th Century progress in the industrial arts had developed into Technology. Process technofacturing now replaces machine fabrication. The flow line is coming into its own. America was conceived in energy and grew into Technology.

The lump of coal shown below is a worthy symbol of our technological culture today. It is our major source of extraneous energy in America. Over 200,000 useful products besides those shown are derived from coal. The continuing impact of the industrial revolution is creating a functional social organism within the anarchistic framework of the ancient Price System. Extraneous energy is the omnipotent physical force determining events and motivating men on this Continent. That is Exhibit A. Professors take notice! (Continued on page 32).

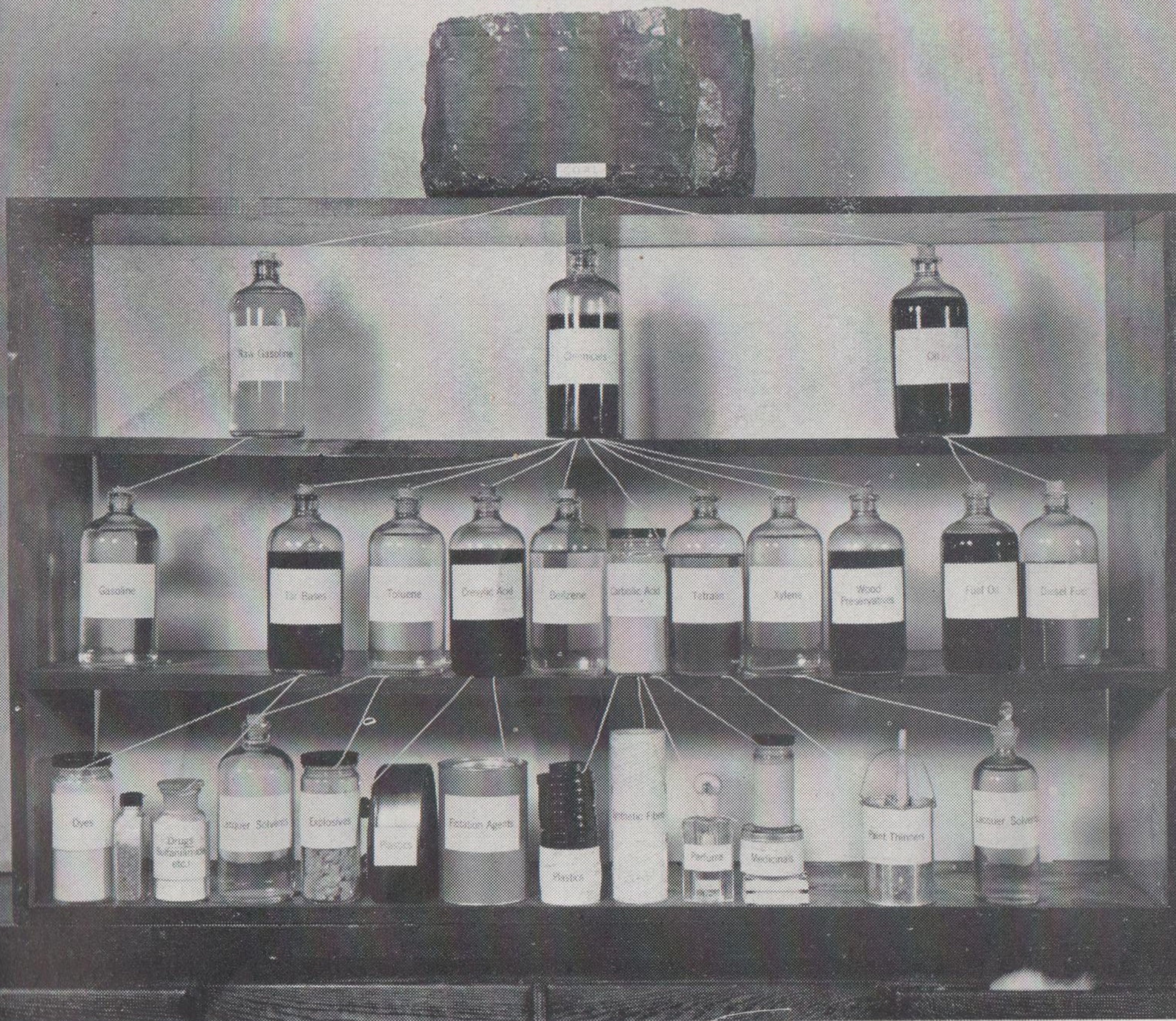
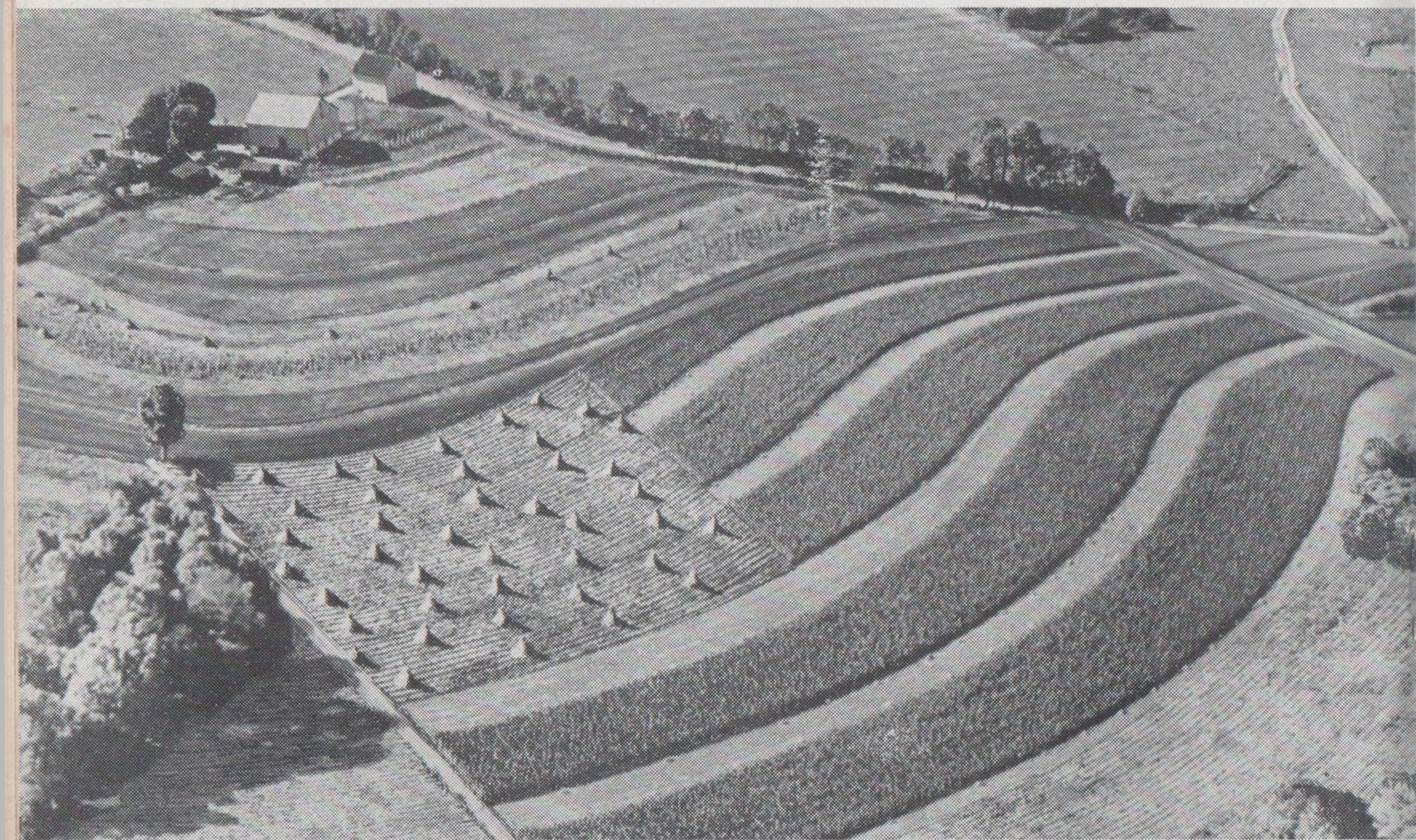




Photo: Courtesy Bristol Brass Corp.

A colonial surveyor with his brass transit. The rectangular system of subdividing land was adopted in 1785. Before that most of the eastern U. S. was surveyed by the old metes and bounds system. This was a word picture of landmarks composing the boundaries of a property. It was workable to a degree but crude. Topographic geological surveying and civil engineering require exact measurement. Log cabin and Indian fort were on the frontier yesterday. Technology is on the frontier today.



Soil Conservation Photo

A composite view of two farms. One is in Pennsylvania and the other in Texas. Contour farming conserves soil. We have mined our soil the same as our forests and minerals for the 'take' that was in it. One-third of our top soil is gone. That's the price paid for 'free enterprise' in farming. 'All men are born free and equal' translated into the Operating Rules of the Price System means 'All men have an equal right to chisel.' America, under the Price System, is dedicated to chiseling.

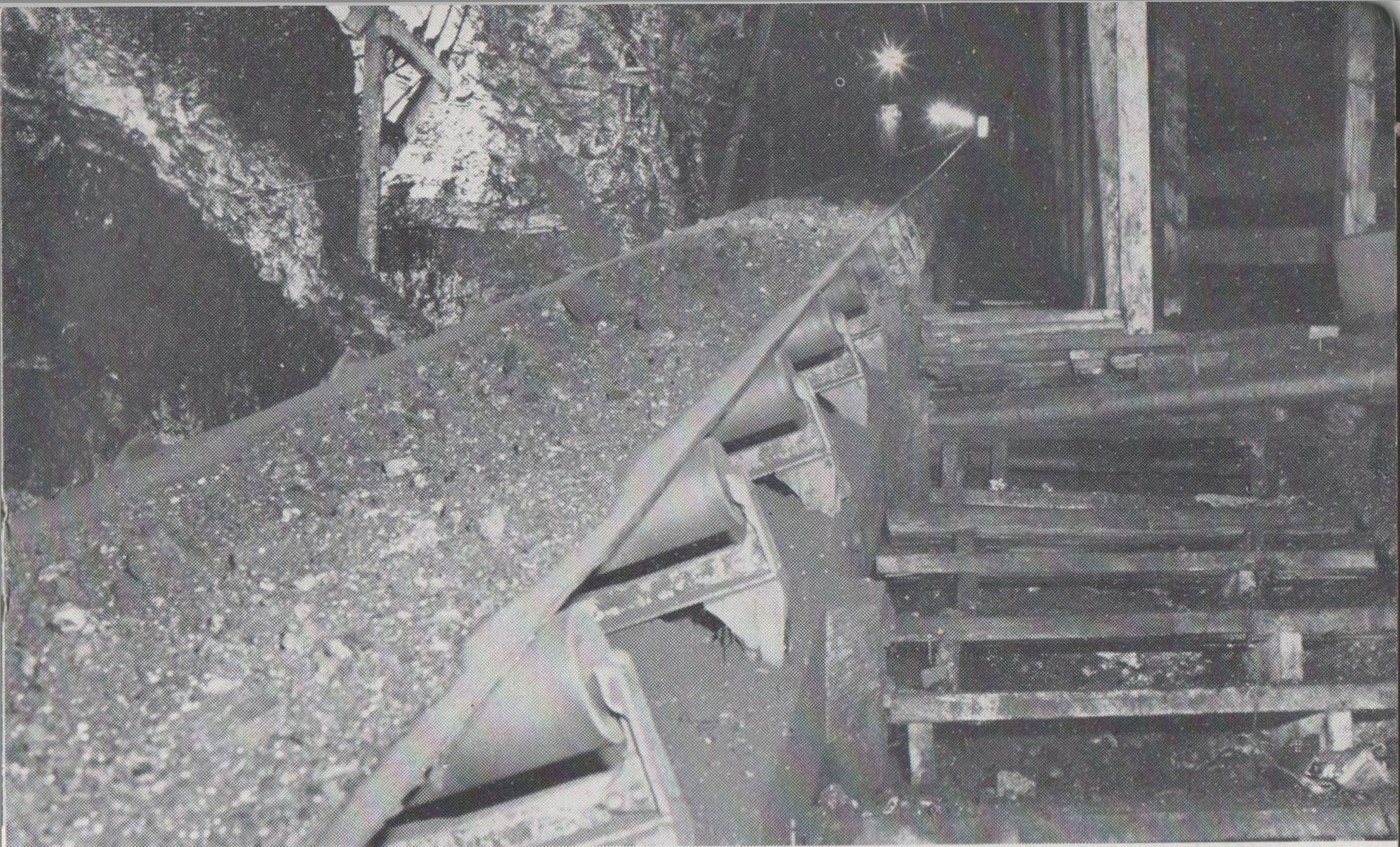
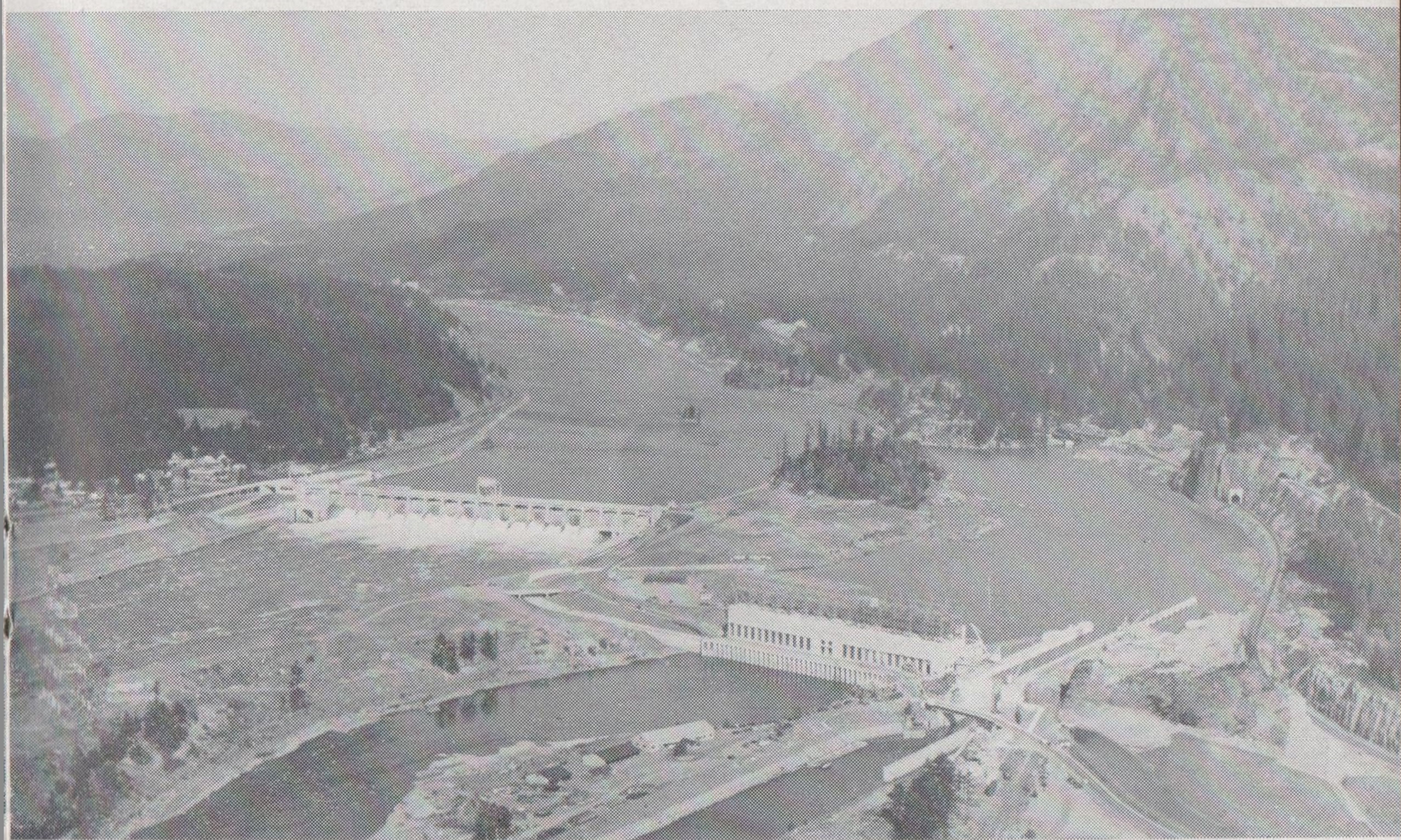


Photo: Courtesy Morrisdale Coal Mining Co.

Here is energy and technology in one picture, a continuous flow process. The company's Maxon Slope Mine is mechanized from the working face to the railroad cars. The slope conveyor shown is 36" wide, 750' long and handles over 4 tons per minute. Results of mechanization have been to greatly increase output per man-hour and produce a better grade of coal. More production but less jobs. This in itself is a technological process affecting our whole social economy. It is a one-way process.



Bonneville Power Administration Photo

Bonneville Dam on the Columbia River. Dr. Paul J. Raver, Bonneville Power Administrator says the Columbia and tributaries have a potential power capacity of 300,000,000,000 kilowatt-hours of energy a year. This is more than total U. S. production today and is equal to nearly 4 trillion man-hours of labor. Says Dr. Raver: 'What you would be harnessing is an inexhaustible energy cycle of the sun and putting it to work.' America does not need atomic energy. It needs technological controls.



Campbell, Wyant and Cannon Foundry Co.

During the war the American Price System foreswore its sacred scarcity principles. Of course, it had to be bought off at a high price. But energy and technology were turned loose to a certain limited extent. It was enough, for they swamped the world with mechanisms. America's Men, Machines and Materiel won the war. Corporate enterprise got the gravy. That's the Price System for you. Now comes the Peace. It too must be won with energy and technology.



Bureau of Reclamation Photo

A transmission circuit, another symbol of America's technological culture. Its wires sing of power. Power for factory, mine, mill, railroad, farm, power for housewife, chorus girl, old folks' home, the man on the street and the man in the electric chair, power for the debt merchant, sky pilot, coupon clipper, procurer and prostitute, power for all, but all must pay. Price first, then power. That's the Rule. Conceived in energy America is still dedicated to the ideology of chiseling.



Press Association Inc.

Here's the way you do it when you don't have POWER. There are 40 or more coolies pulling a heavy stone roller to smooth off an airplane runway. Total energy about 5 hp. Above roars an American Liberator with thousands of horsepower. China is a great nation for philosophy but it takes POWER to produce goods. America is a great Continent for Power but it takes technological controls to utilize it fully. As a people we're as far off the beam on our problem as the Chinese.



Photo: Courtesy Page Engineering Co.

A strip mine in Illinois. It operates two walking draglines with 25 yard automatic buckets in stripping off overburden as deep as 80 feet. One unit digs about 25,000 yards a day. In 1944 Illinois strip mines produced 17,000,000 tons of coal. Prior to 1920 strip mines hardly existed. The average output in strip mines is about 25 tons a man per eight-hour day. In 1840 it took 1 man 12 hours to dig 1 ton of coal. The difference is extraneous energy. The difference gets rapidly greater.

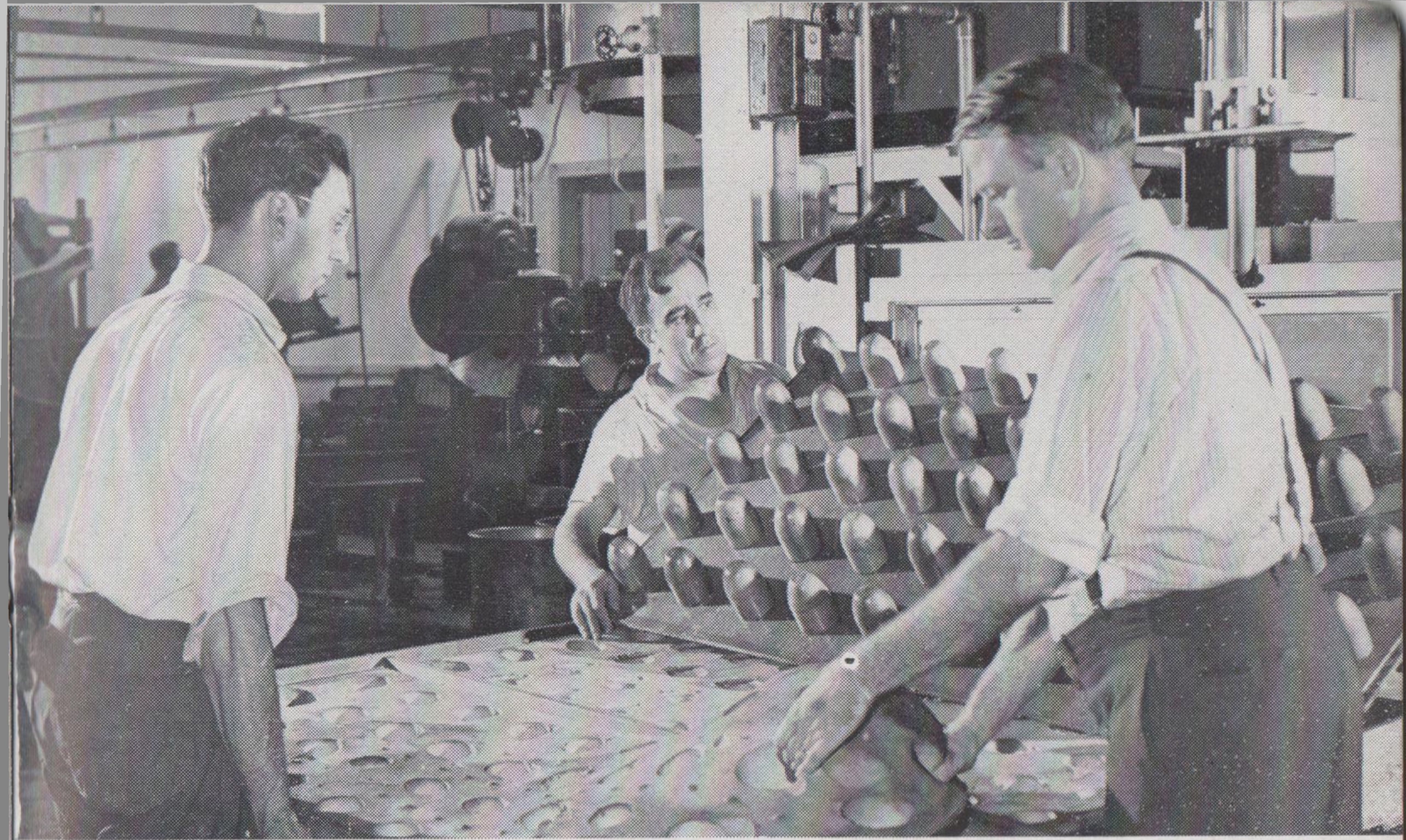


Photo: Courtesy Firestone Tire and Rubber Co.

High frequency energy curing of rubber mattresses is 10 times faster than steam. A 125,000 watt generator operating on 13.66 mc. vulcanizes by heat of molecular agitation. Says Chairman John W. Thomas of Firestone: 'The use of electronics in industry—gives great promise of revolutionizing manufacturing methods.' The Firestone Research Manager says electronics will be in common use for curing tires in two years. Down go unit costs and jobs, up goes production. Who will they sell to?



Photo: Courtesy Ford Motor Company

Yes! The accent is on science and its offspring Energy and Technology. That's how modern industry produces. Here is the nucleus of our American problem. We must put the same accent on the solution of all problems of society. The Price System cannot do it. Reason? It employs political, moral and financial methods, where technological controls are needed. Our entire social structure must be redesigned. This scene is along the Columbia Icefields Highway in Alberta, Canada.

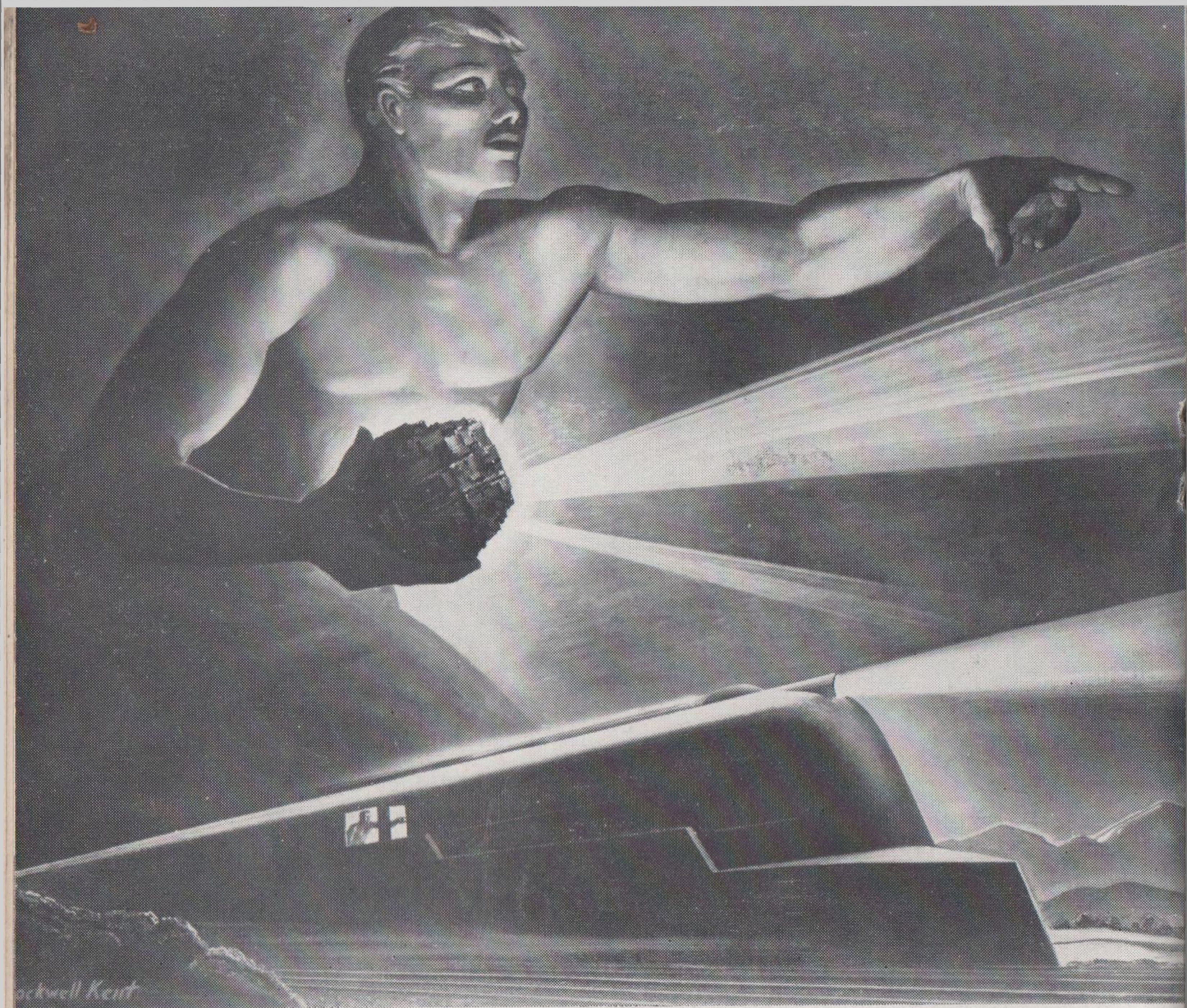


Photo: Courtesy Bituminous Coal Institute

'Power for the Wheels of Progress'

However you define progress, every advance in the General Welfare can be measured in units of power. Technocrats have been called 'Knights, not of the sword but of Energy.' For over 12 years Technocracy has been teaching the paramount importance of energy and technology in relation to America's social problem. It has put the accent on Exhibit A.

All the do-gooders are now thumping it up to save the world from possible atomic destruction. They see the problem out of focus with its factors. The world cannot be saved at all, unless America is saved first. Saved from what? Why, the Price System, of course! 'Oh, horrors, you can't do that. It wouldn't be democratic,' say the do-gooders.

Saving the world from atomic destruction is a problem in energy control. It is a scientific, not a political, problem. America has the most highly developed technology. Free that and you save America, and then the world. After the Price System is abandoned here, the entire world will be safe to develop in peace. It is the Price System which has gotten America into the mess it is now in and it is the Price System that is now playing around with the loaded gun of atomic energy. Put that on your slide rule, professor! The answer you will get is that you can't dodge Exhibit A much longer.

Like the streamlined train in this picture, America's magnificent technology plows along through the night of the Price System. Dawn is just over the horizon. It always comes. It came at Hiroshima. It will come here. What will it be like? The Genie points out the way. He seems to say: 'Forward, it isn't far now! Energy lights the way. Technology turns the wheels. Eyes ahead! Chin up! It's there! I can see it! FORWARD TO THE NEW AMERICA!'

Primer of Technocracy

The Answer Is Energy

By Wiley Holcomb, 8342-1

Energy Is Basic

Man has existed on this earth for hundreds of thousands of years. Archaeological data and six thousand years of recorded history have given us some idea of how he existed. The most interesting chapter is the story of his struggle for the control and development of the flow of energy. This has been not only the least understood chapter of man's history but also the most misunderstood. Historical research has done an excellent job of piecing together the story of the human race as a whole. Had it confined its written results to a simple recording of the facts, the way of the history student would be less confusing. A great deal of attention, however, is given to acts of political intrigue, military exploits and business acumen, as though by these man had been enabled to progress from a primitive state to what we are pleased to call modern civilization. A more critical examination will disclose that these episodes are only some of the more colorful escapades of our predatory ancestors and had nothing to do with social change.

Social change occurs only when man makes a new application of his accumulated knowledge to the means whereby he lives. In any social system where man is the sole means of doing work, very little social change is possible. Even today, without the use of technology, man cannot spade an acre of ground any quicker than the Egyptian Slave.

The Industrial System and standard of living of today are the result of 150

years of scientific development. It should be noted that the human race made no real progress until it was discovered how to convert energy by mechanical means. It is interesting to note that the first practical steam engine was built in 1776, the year of the signing of the *Declaration of Independence*. Adam Smith's *Wealth of Nations* also was published in that same year.

Every school boy has studied the history of the *Declaration of Independence*. Every economist is familiar with Adam Smith's *Wealth of Nations*, but the significance of James Watt's steam engine is overlooked. The *Declaration of Independence* is an historical document declaring the political independence of the American colonies from England. James Watt's steam engine was the first practical step in the harnessing of the Sun's energy by mechanical means. This effected a profound change in the method of getting work done, and consequently brought social change to the whole social structure. Adam Smith's *Wealth of Nations* was invalidated in the year of its publication by Watt's steam engine and has served but to confuse and confound students even to this day.

Life Is Energy

All living organisms exist only as a result of the flow of energy from the Sun. Plant life is the only living organism which can utilize the sun's energy directly. All other forms of life are one or more steps removed. Hence plant life is the doorway through which the flow of energy

from the sun becomes available to other forms of life. Chlorophyl, the green coloring matter of the plant, can be called the key to life. It is this substance, acting as a catalyst, which effects the wedding of matter and energy. Some plants can be used by man in their natural state, but for the most part they must be processed. Coal and oil, both highly concentrated stores of energy are traceable to the sun. Both are the remains of plants and animals preserved from decay by burial under great thicknesses of rocks. Coal and oil in their present forms are the result of nature's slow process of alteration through geologic ages.

Our industrial system of today is only possible because of man's ability to concentrate and speed up, under more favorable conditions, some of nature's processes. To illustrate this we can use agriculture for an example. Through a process of selection, irrigation and fertilization plants grow and produce far in excess of what they do in their natural state. In the United States in recent years we have been in a position where edible crops could be diverted to industrial uses not related to the food supply. No parallel of this kind existed in previous history, or even for most of the world today.

We have stressed the part played by plants as a converter of the sun's energy for man's use. Here we wish to note an exception. That is the energy of the wind and falling water. Both derive from the sun but are not directly related to the biological processes of plant or animal life. The life of any area, plant, animal or human, is dependent on the continuous flow of energy from the sun. If that flow is interrupted for any appreciable time, life disappears.

Energy Can't Be Evaluated

Man in his primitive state was en-

tirely dependent upon nature for his food and shelter, in perilous competition with the animals. Through the possession of a higher order of intelligence, he was able to change his status from that of competition to that of mastery over the animals, and to varying degrees over nature. We do not know how long this took or the exact order of the steps in his progression but we do know of some of the more significant ones. First came the discovery of fire, then the domestication of certain plants and animals. The early discovery that man, by organizing with others and allotting certain tasks to each, not only increased the total production of the group but also provided more security for the individual was another step.

When man began living in communities, he developed the basic foundation of all Price System economies, i.e., exchange based on commodity evaluation. Any object derives its exchange value on the basis of its relative scarcity or abundance. When man places a value on the product of his labor and exchanges it for the product of someone else's labor, he is in effect attempting to evaluate the flow of energy. This can work only where man is the prime mover. Value depends upon scarcity and energy is plentiful in America.

In the early handicraft-agrarian civilizations man occupied a dual position. He was the prime mover of all work done and he also conducted social affairs among men. Throughout the thousands of years that the human race lived under the scarcity conditions of handicraft-agrarian civilization, he developed a type of social control and mode of behavior best suited to that kind of an environment. It conditioned him into being the most acquisitive of all species of life. It is only

natural, then, that the more astute and ruthless should seek control of the production of scarcity and thus gain a differential advantage over society in general.

This type of control constitutes an interference in the orderly working of any society. However, in a society where man is the prime mover, the opportunities to interfere with its orderly working are restricted to the same low scale at which he is able to produce. The degree of social interference from the top is not dangerous. When the rate at which man utilizes the flow of energy increases, then the opportunities to interfere also increase. Then, social interference from the top becomes a menace to the General Welfare.

In the United States today over 98 percent of all work done is done by energy other than human. Man no longer occupies the same dual role. Our social controls and mode of behavior, however, are still predicated on a theory of scarcity conditions. Today we tolerate a very dangerous degree of interference with the orderly operation of society.

The last 20 years presents an unparalleled example of man in conflict with his social inheritance. Witness our efforts for ever greater production, while at the same time we engage in wholesale destruction, in an effort to maintain our mythical social importance of occupying the dual role of prime mover of all work done and the director of affairs among men. What is the reason for this illogical behavior? It is simply that our Twentieth Century civilization has a background of seven thousand years of handicraft agrarian culture. It has found its modern expression only in the energy conversion and utilization in the era beginning with James Watt's steam engine. To put it another way, the

social hangover of the past dominates our industrial culture today.

Energy Must Be Measured

Energy conversion is the common denominator of man's activities. The control of society is and always has been derived from the energy converted in the process of living. The method of control must, of necessity, be based on the principal energy converter. Man has occupied this position for thousands of years. The domestication of animals, the development of windmills and crude water wheels had no appreciable effect on man's position as the principal energy converter. James Watt did more than build a steam engine. He was tugging at the foundation of man's superimposed social controls.

The mechanical conversion of energy accounts for nearly all work done in the United States today. The method of social control must of necessity be based on this fact. The atomic bomb is forcing a belated recognition of this. The only known way for controlling mechanical energy conversion is by the exact method of measurement. This method of measurement must be extended to the overall control of society.

The only method of social control which conforms to the physical problems posed by a social system which produces its goods and services by two billion installed horsepower of energy converters, is the Energy Certificate of Technocracy. We cannot emphasize too strongly that the Energy Certificate is a method of social control applicable to a high energy converting area ONLY. It is not to be confused with any perpetual motion theories of high finance, politics, economics or philosophy.

To properly understand the func-

tion of the Energy Certificate, we must know under what conditions it is to apply. There must be sufficient natural resources available for the production and distribution of an abundance for all. Such resources include energy, minerals, croplands, trained personnel, technology, equipment, etc. The Energy Certificate then becomes an integral part of the social mechanism in the production and distribution of an abundance. The purchasing power of the Energy Certificate is related quantitatively to the physical cost of production of goods and services, that is, the definitive unit on the Certificate is the equivalent of the energy used in production. The total Energy Certificates used in a 24-hour period are recorded and totaled, thus giving a continuous 24-hour inventory.

From this method of procedure, those responsible for the operation of the production and distribution sequences will be able to make decisions quantitatively. This may sound rather abstruse. If so, let us be reminded of some pertinent facts. The technique of measuring has been applied to 'product control' throughout nearly all modern industry. We are continually increasing our energy conversion capacity by new installations and increasing the efficiency of existing equipment. Atomic energy is no longer just a vague theory. We have set in motion a force of such magnitude that it can be controlled only by exact methods. It is both a challenge and an opportunity.

Conclusion

The essence of our social problem today, then, is the necessity to apply quantitative methods of measurement to its solution. The quantitative character of our present principal energy converters makes this possible, indeed

compulsory. The difference between our Power Age Culture and the handicraft-agrarian civilizations of the past is that we are now in the fortunate position of being able to MEASURE social problems. We can arrive at social decisions by metrical methods.

It is no longer necessary to use the control methods of the past wherein social decisions were effected by opinions and authoritarian dictums. The continued impact of science and technology upon society in the last 150 years has produced a quantitative change in social problems. These can, for the first time in man's history, now be measured. That is the only way to solve them. The Energy Certificate of Technocracy is one of the metrical instruments of social control that can be used in a technological society such as we now live in. There are others of importance also.

The entire social design of Technocracy is based upon technological principles derived from physical laws. The foundation is Energy. The methods of operation are metrical. The end results will be a tremendous advancement in the General Welfare.

If you are one of those Americans concerned about the future of your country; if you are concerned about your own future and that of your family, we urge you to investigate Technocracy. The answer to your problem is there.

Get Away Old Man

The average age of the scientists who worked on the atomic project at Los Alamos, New Mexico, was between 29 and 30. The average age of the special Senate Committee (politicians) on atomic energy is 57½ years. (*Chicago Sun*, November 23, 1945.)

Technocracy and Your Trade

The Rubber Worker

By Organization Division, 8741-1

Goodyear Started It

The rubber products industry comprises two groups, i. e., Rubber Tires and Inner Tubes and Other Rubber Goods. The latter group manufactures such items as boots, shoes, heels, soles, raincoats, sheeting, water bottles, gaskets, washers, gloves, etc. In fact, there are over 30,000 industrial and consumer items that contain some form of rubber. These are manufactured principally in small establishments. In 1929 there were 434 such factories. By 1939 this number had increased to 552.

In contrast to this, the number of factories making motor vehicle tires and inner tubes was only 91 in 1929 and declined to 53 in 1939. However, even in the non-concentrated Other Rubber Goods Industry, technology has been at work. The peak of production and man-hours used, prior to the war, came together in 1928. Taking 1929 to equal 100, production of Other Rubber Goods stood at 103.8 percent and man-hours at 103.1 percent in 1928. Both declined steadily up to 1936, but man-hours declined more than production.

By 1936 production stood at about 80 percent of 1929 and man-hours at 72.8. In exact figures the total number of man-hours used in 1928 was 232,995,000. This declined to 164,569,000 in 1936. Total employment likewise declined from 84,200 in 1928 to 81,500 in 1936. Output per man-hour, however, went up. Again, taking 1929 to equal 100, the output per man-hour rose from 100.7 in 1928 to above 122 percent in 1936. This explains the lesser decrease in production over this period,

as compared to the greater decline in total man-hours used.

Due to the dispersed character of the Other Rubber Goods industry, it is difficult to get a good, clear picture of the impact of technology. Complete figures are not available for some years. There was a rise in production in the entire Rubber Products Industry beginning in 1936 and continuing up to the outbreak of war. This amounted to a 7 percent increase over 1929. Presumably the Other Rubber Goods group shared in this increase, but we could not find a breakdown of production figures into separate fields. The sources of the information used above were the W.P.A. National Research Project, the *Statistical Abstract* and the Bureau of Labor Statistics.

What sort of a picture does this data boil down to? First, we note a 24 percent increase in the number of small plants; second, about 3 percent decrease in employment; third, a 30.3 percent decrease in man-hours used; fourth, about a 20 percent decrease in production; and last, a 22.3 percent increase in output per man-hour. This picture is not typical of the impact of technology. There are modifying factors present. The figures on total employment are irrelevant to the underlying effect. Purchasing power is based upon the number of man-hours used. Here we have a 30 percent decrease in man-hours but only a 3 percent decrease in total employment. Obviously, the group of workers as a whole received 30 percent less purchasing power. So, there must have been a lot of sharing-the-work, to maintain total employment.

Divide and Lose Your Shirt

You can bet that the boss didn't do much of this dividing up. That Christian privilege is always reserved for the workers. Production fell about 20 percent but man-hours were cut 30 percent. The factor that made possible the big decrease in total man-hours used was the rise in output per man-hour. That is one of the major effects of the impact of energy and technology. If the Other Rubber Industry was not dispersed into a large number of small establishments, this effect would be greater. A small plant cannot install a maximum of technology. This can only reach a high degree of application where there is volume production and continuous flow processes.

There is another aspect to this picture deserving consideration. That is the increase in number of small establishments manufacturing rubber items. This trend is contrary to the typical progression of American industry. In that respect it is anti-American. Our present level of living standards and the possibility to move upward to much higher levels came about as a result of the state of development of technology and the degree of its application. This is possible to any appreciable extent only by integrated and concentrated industrial sequences of operation. In other words, units big enough to apply a maximum of technology.

The cockroach capitalist who operates a small plant is perforce required to apply cockroach methods of production. This leads to cockroach living standards. Small business may be 'sacred' to free enterprise but we have noticed that the small chiselers always jump at the chance to become big chiselers. Small operations, small thinking is characteristic of fascism.

If you carry it far enough, you get back to hand tools and human toil. That is not the destiny of America. So, let us leave the small operations of the Other Rubber Group and have a look at what's going on among the big chiselers in the tire industry. They've got what it takes to apply technology on a big scale.

Did Rubber Win the War?

In contrast to the dispersed character of the Other Rubber Goods group, the Tire and Inner Tube industry is a highly concentrated operation. As early as 1935 tire sales of the four largest companies 'constituted about 90 percent of the total by value.' The number of establishments has been constantly declining. 'Tire production is by far the largest end use of rubber now as it was before the war.' Then 'about 80 percent of the new rubber consumption and 45 percent of all reclaimed rubber went into tires.' During the war these amounts were reduced to 70 and 25 percent, respectively, due to diversion of rubber to other war uses.

Production of tires has gone sharply upward since 1939. In 1944 it was 'double the 1939 figure.' For the first three years of the war total output was 42 percent over the three years immediately preceding the war. However, due to the war, the nature of that production changed. The accent was put on production of military tires for trucks, airplanes and motorized equipment. Figures are not available on this production as yet but it was tremendous.

Production of civilian passenger car and truck tires declined during the war. In 1941, the last peacetime year, total output was 61,540,000 tires. In 1942 it dropped to 15,494,000 to rise again by 1945 to 44,100,000.

The CPA estimates production for 1946 at 79,000,000 tires of all types. The industry now has an annual capacity of 100,000,000 tires. Pre-war truck tire capacity was about 12,000,000. Now it is 20,000,000. Passenger car tire capacity has risen from the pre-war capacity of about 60,000,000 to near 80,000,000.

Total employment in tire factories increased from 66,000 in 1941 to 92,100 in 1944. In 1945 it dropped to 86,300 and the estimated employment for 1946 is 85,000. Man-hours of labor doubled between 1939 and the end of 1944 largely 'because the work week increased from 35 to 46.4 hours' during the period. However, the average work week had declined to 41.5 hours by August 1945. Complete figures are not available as yet, but the trend is plainly toward greatly increased production and a decline of man-hours.

The increased use of man-hours during the first three years of the war was largely necessitated by the change in the character of the product. 'The shift to heavy duty truck, bus and airplane tires, weighing 65 pounds and more compared with 22 pounds for the widely used 6.00-16 passenger tire and the increase in the use of tires with heavier tread explains the need for additional manpower.' Five new plants designed to produce heavy duty tires went into operation in 1945 under the expansion program authorized in 1943. In addition, new tire building machinery has been installed in a number of existing plants. So, the curve of man-hours must go down as the curve of production rises. The information and quotes used above are from *Domestic Commerce* and the *Survey of Current Business*.

Remember The Depression?

The pre-war peak of tire produc-

tion employment and man-hours occurred in 1928. In that year over 70,000,000 tires and inner tubes were produced; 65,100 wage earners were employed, and 142,088,000 man-hours of labor were used. By 1936 these figures had declined to about 53,000,000 tires, 40,400 wage earners and 68,766,000 man-hours of labor. On the face of it this looks like a declining trend all the way around. Closer analysis, however, reveals that while production dropped about 5 percent and total employment about 38 percent, the actual number of man-hours of labor bought and paid for decreased about 49 percent

Let us re-emphasize that the number of wage earners employed is irrelevant. It would have been entirely feasible for the tire industry to maintain the total number employed between 1928 and 1936 at 65,100 while at the same time reducing man-hours of labor 49 percent. If all you want is jobs, all you have to do is divide up the work. Then you have to reduce average hourly wages, otherwise unit costs of production rise too high and you go out of business altogether.

The factor which made it possible to dispense with half the man-hours of labor in 1936, as compared to 1928, while suffering only a 25 percent reduction in production, was the increasing productivity of labor, as reflected in the output per man-hour. Taking 1929 to equal 100, production stood at 103.2 percent of that in 1928. By 1936 it had dropped to 91.3 percent. In 1928 man-hours stood at 103.6 of the 1929 level but dropped to 50.1 percent by 1936. Output per man-hour, however, rose from 99.6 percent in 1928 to 182.2 percent of the 1929 level by 1936.

This picture is typical of American technology. Here we have an industry

becoming more concentrated all the time and applying technology on an effective scale. TNEC Monograph No. 22 says of the tire industry: 'The automobile tire industry is an example of the increase in labor productivity through the gradual but constant introduction of numerous, small detailed innovations in the productive process.' Monograph No. 22 states that except for one major change, the replacement of the core process by the flat drum process, these changes have been minor. Their cumulative effect, however, has been great. Appended to the report is a list of 16 innovations in just two plants, which innovations displaced a total of 211 workers on each shift. In six representative tire plants, there was a technological displacement of 28,189,000 man-hours of labor between 1922 and 1931. While this process was going on, production rose until at the end of the period it had more than doubled. The sources of the information used above were the N.R.P., the *Statistical Abstract* and the T.N.E.C. report.

'Nothing Rolls Like a Ball'

This is the real American way in production, i.e., more output with less work. The prospect for the future spells out more and larger doses of the same.

The impact of technology continues in the Rubber Products Industry as a whole. A report of the Subcommittee on War Mobilization, published in May 1945, entitled *War-time Technological Developments*, lists dozens of new processes which affect both branches of the Rubber Products Industry. Such innovations as tires that will not skid on ice, tires good for 100,000 miles, Butyl inner tubes, electronic vulcanization of rubber to replace the slower steam process, etc., will have their impact

in the industry. In some cases, new jobs may be created but more old jobs will be eliminated.

One outstanding new technological development announced recently promises to slaughter jobs on a really effective scale. It was announced by the General Tire and Rubber Company with the assertion that the rubber industry stands 'on the threshold of a new and revolutionary era in tire manufacturing.' The development referred to is an automatic machine that will turn out one passenger car tire every two minutes. Operated at full capacity on four six-hour shifts, the machine will turn out 720 tires a day.

The device requires the attention of three persons only, an operator and two assistants. Business Week reports that 'a pushbutton activates a rotating cylinder around which the tire is built. Tread material is automatically dropped into position from overhead rolls. The only steps in the process which require human hands are placing the beads in position at the start of the process, ripping the fabric on the bias, cutting the breaker strip, and removing the tire from the machine.' Its output is 'more than twice the output of any other machine in the industry, more than five times the average output by the old hand-made method.' The machine 'eliminates the need for skilled labor, reduces the percentage of rejections, and makes a more uniformly perfect tire.'

Five of the new automatic machines are already in operation in Akron plants. Operating 360 days a year, these five units, each making 720 tires a day, can turn out over 1,000,000 tires. If we need 80,000,000 tires a year, then 400 of these machines each employing only 12 men a day for a total of 4800 workers could supply

them. The total of man-hours of labor per year necessary would be 10,368,000, since each unit requires only 72 per day. Compare this with the prewar peak of 142,088,000 man-hours used in 1928 and you get an approximation of the scope of technological displacement possible with this new process.

'I Got Plenty of Troubles'

Of course, there aren't 400 of these machines in existence, but that's not the point. There are five of them in actual operation and the other 395 can be built if and when necessary. The point is that there is a unidirectional and irreversible trend of technological displacement of labor in operation. The point is that the 'tycoons' of the rubber tire industry already have an unanswerable answer to the challenge of labor unionism. The rubber worker of America is up against the irresistible power of technology. This power can be used to displace man-hours of labor, eliminate skills and reduce employment opportunities.

Under the tyranny and regimentation of the Price System, the rubber worker can depend upon it that things will work out that way. Don't get us wrong on this. Technocracy is not against labor. We are merely giving an accurate and objective report of how the impact of technology has affected, is affecting and will affect the rubber worker. Labor unionism is necessary to obtain immediate economic benefits and to retain as much of what has been gained as is possible. It does not and cannot hold the long-range solution to the social problem of the rubber worker.

That solution is a part of the solution of the social problem of all North Americans. The same trend illustrated in this story is at work

in all industry. North America is a technological unity. The owners of industry, the bosses, are caught up in that trend as well as the workers. Due to the nature of the Price System structure and its rules of operation, it is imperative to install ever more and more technology. Neither bosses nor workers created the Price System. It just grew into the thing it is today. Neither bosses nor workers can do much about it except to obey its rules of operation or else become a public charge.

The muddling political methods, characteristic of our oxcart principles of social control, cannot solve North America's social problem. Their clumsy ineptness becomes more pronounced as our technological civilization grows more complex. The pressure tactics of minority groups can only transfer a part of the 'take' temporarily from one group to another. Neither fascism, communism, or middle of the roadism will avail. A technological civilization must be operated by technological methods, or else revert to a simpler culture which can be operated by Price System methods.

It Never Happened Before

The social problem of North America is unique in that the present technological nature of our culture was developed within the framework of a Price System. This happened in the last 170 years. Technology is straining at the bounds set upon it by the Price System. Nearly all the worthwhile things in modern America came about as a result of the impact of science and technology. Nearly all of its social maladjustments are caused by the interference control of Price System methods of operation. *Technology must be freed.*

This is the cue for the rubber worker, as it is for all other citizens.

of North America. The social problem of every individual citizen is the same. What shall we do to live? The Price System can never solve it for all citizens, only for the sharpest chiselers. That's the way a Price System works. The rubber worker can never divorce himself from the collective nature of our social problem. There is no escape anywhere. Science and technology have made us one. Even the 'tycoons' of the rubber industry cannot escape. Technology has them by the throat.

The Price System will muddle along and get worse. The rubber industry will also muddle along. The rubber worker up-to-date has been doing his share of the muddling too. Why continue to muddle around? It's totally unnecessary. There is a solution to

the social problem of the rubber worker, to the industrial problems of the rubber industry and to the collective problem of all North Americans. There is a common denominator. Technocracy has the answer.

Mr. Rubber Worker, when are you going to wake up? And you, Mrs. Rubber Worker, you compose 37 percent of all the employees making rubber products. When will you realize that the Price System holds nothing for you except an increasingly precarious form of wage slavery. Call on your friends, the Technocrats. Challenge them to explain the solution to our common social problem. Don't be sidetracked by the propaganda of the Price System. It never got anybody anything but hard knocks. INVESTIGATE TECHNOCRACY!

Give Thanks for Energy

The world's largest dragline was put into operation recently near Bartow, Florida, in the phosphate mines. The device is called the 'Bigger Digger.' It weighs 1250 tons and required 54 railroad flat cars to ship the component parts from the factory in Ohio. The bucket alone weighs 40 tons. It swings from a 225 foot long beam and bites off 30 tons of earth at a time. 'The money and time saving economies of the machine are obvious.' (*Tampa Tribune*, January 4, 1946.) Ed. Note: This sure looks like one of those 'labor assistance' devices the public relations semanticists of corporate enterprise are now talking about. It will 'assist' many a shovel still off the job.

The shoes on your feet took about an hour to make. That's the average rate per pair per worker. It's 20 times the speed in Civil War days, when leather soles had to be attached to uppers by hand methods.—From a release of the Sole Leather

Bureau of the Tanner's Council of America. (*Chicago Daily News*, January 18, 1946.)

Who'd ever think that three husky Schenectady policemen would wear themselves out trying to do the job usually done by one small G-E timer? That's just what happened when the timer that controls the changing of traffic lights and the length of time they stay on became damaged and was returned to the West Lynn Works for repairs.

The G-E timer was removed from one of the busiest intersections in Schenectady, and manpower was substituted. Before the repaired equipment could be returned, two policemen had gone to the Chief of Police and had begged for transfers to 'any other beat in town.' The third cop, when the timer was finally rushed to the spot, said: 'Thanks, boys.. I'm going over to the cathedral now and give thanks for coming out of this alive.' (*G. E. News Digest*, Autumn 1945.)

Technology Marches On

Try To Stop Me Now

By Research Division 8741-1

Illinois Coal Mining

'If my memory serves me correctly, and I think it does, the year 1920 would be considered in the pre-mechanization period or pre-modernization period. In 1920 practically all coal was being loaded by hand. Much of the gathering was done by mules. The only mechanized methods then in use that remain today are the undercutting machine—and the use of battery or reel locomotives for gathering which was just getting under swing in many mines. Practically all tonnage in the State of Illinois was procured from deep shaft operations.

'The year (1920) was also just the beginning of strip operations and then only 367,000 tons (of an illy prepared product) out of 72,000,000

tons came from the open pits. Compare this to the 1944 figure wherein strip operations produced 17,000,000 tons of excellently prepared coal out of approximately 74,000,000 tons of bituminous coal produced in the State of Illinois. This same period saw the mechanically mined coal in deep-shaft operations go from zero to over 90 percent of production.

'The following table shows a comparison in the number of mines, men employed, and tons produced in the years 1920 and 1944. These figures cover only the shipping mines, which produce over 95 percent of the State's output and do not include the so-called "local mines," which in 1944 produced approximately 3,500,000 tons.

Year	No. of Shipping Mines	Men Employed	Tons Produced
1920	373	85,000	72,409,000
1944	157	29,000	73,958,000
	—216	—56,000	+ 1,549,000

'In summing up the changes during the past 25 years, the development of stripping methods—and the utilization of modern machinery to replace manual methods, are the outstanding items. These improvements have made it necessary to utilize skilled employees in the mining of coal, similar to the skilled employees utilized in manufacturing plants. The modern miner is now a skilled machine operator or a skilled mechanic.' (W. J. Jenkins, President and General Manager, The Consolidated Coal Company, in *Mining Congress Journal*, September 1945).

Ed. Note: See Technocracy Study Course, pages 114, 115 and 116.

Cotton Picking

A recent mechanical cotton picking machine demonstration in York Co., S.C., attracted a large gathering of planters from both North and South Carolina. At the York Co. demonstration the device picked 800 pounds of seed cotton in thirty-six minutes, or as much as four hand pickers could turn out in an entire day. The machine costs around \$5,000, with the tractor which pulls it. Large scale

planters will have no difficulty buying them and it was said that less affluent ones will band together to acquire one. (*New York Times*, December 2, 1945.)

Resistance to mechanical cotton pickers is based chiefly on the fact that they lower the grade of cotton by garnering leaves and stems. (Grade means the condition of the fibre after it is harvested; quality means the length and uniformity of the individual strands of cotton and the uniformity of all the strands in a whole bale). The Agriculture Department points out that the quality of cotton has been increasing steadily the last few years because of better seeds and improved plants.

Despite these improved plants the gins are turning out a lower grade of cotton because of two factors. 1) There has been a shortage of field hands since the war started so cotton stays in the field after the bolls open and gets weather beaten. 2) Inexperienced pickers gather trash and dirt along with cotton so the ginner has to beat the cotton to pieces to get it clean. Advocates of machine picking say this condition is lessening resistance to the machine because at least the machine gets the cotton in out of the weather. Thus, a negative physical condition is actually assisting the introduction of a new technological process.

However, there are positive physical factors at work also. The latest dusting material helps the picking machines. Powdered calcium cyanimid kills cotton leaves in 48 hours. They shrivel to nothing while the rest of the plant is not affected but grows on. When the sun strikes the bolls, they all open at once, instead of taking days or weeks. This leaves a clean field for the picking machine to operate in.

Other machines assisting the mechanization of cotton are the flame cultivator and the mechanical chopper. The flame cultivator destroys all weeds in a cotton field without harming the woody stem of the cotton plant. Chopping is the process of thinning out the small plants after it can be seen how thick a stand has started to grow. Mechanical choppers come in one row and three row sizes. The one row machine displaces 40 field hands and the three row machine lets out 120. International Harvester has built 115 cotton picking machines since 1942. Last year they built 75 and are planning for 100 in 1946. (*Wall Street Journal*, December 4 and 24, 1945.) *Ed note*: See *Man-Hours and Distribution*, bottom of page 20, page 21 and top two-thirds of page 22.

Plastics

A new fully automatic forming machine for producing transparent thermoplastic containers by the drawing method makes possible an increase in the productivity of a worker from a prewar level of 10 pieces per minute to 400 or 500 pieces per minute. The new machine produces 90 containers a minute, a speed more than 4 times that of the best semi-automatic machines. One unskilled operator can tend from 4 to 6 machines. By means of a cam-action press, the machine duplicates the motion of hand-drawing. In fact, the special feature of the machine is its reproduction of the double hesitation movement of the manual stroke. The machines are now in use at the Celanese Plastics Corporation, Newark, N.J., and are manufactured by F. L. Smythe Machine Company, Inc. (*Modern Plastics*, June 1945.) *Ed Note*: See *Introduction to Technocracy*, second paragraph, page 19.

Each in His Own Tongue

By Publications Division 8741-1

Voice Of The Price System

Labor Problem Solution

The task of creating jobs simmers down to creating wants, and wants are created by selling.

Arthur H. Motley, publisher of *American Magazine*, to a luncheon meeting in Hotel Cleveland at a one-day 'brass tacks' panel discussion on distribution sponsored by N.A.M. (as reported in the *Cleveland Plain Dealer*, October 4, 1945).

Axe and Cherry Tree History

It's a long story, but the gist of it is that Big Business threw itself, without thought of profit, wholeheartedly into war production.

James Truslow Adams in his book *Big Business In A Democracy* (as reported in the *New Republic*, September 17, 1945).

This Is Economics

I object to headlong wage demands because the union's tendency is to lessen production. At one time American railroads had 2 million employes. Just before the war there were 1 million because wage increases had forced railroad rates so high that business was going to buses, trucks and other competitors.

Dr. Wilford Isbell King, professor of economics at New York University, to a press conference preceding a luncheon meeting of the Chicago Rotary Club (as reported in the *Chicago Tribune*, Sept. 26, 1945).

Political Magic

We have torn from the earth copper, petroleum, iron ore, tungsten and every other mineral required to fight a war without regard to future supplies . . . We must proceed with all possible diligence not merely to restore these depleted resources to their pre-war standards, but to make them greater and richer than ever before.

President Harry S. Truman, in a recent speech (as quoted in the column *Inside Washington* in the *Chicago Sun*, January 2, 1946).

Ragged Individualism

Hitler's Germany would be a kindergarten compared with the tyranny that would develop in any country that provided jobs for all. Only as men and women rustle their own jobs, will they remain independent.

From *Safety Valve*, house organ of the Freedom Oil Company, Freedom, Penn. (as quoted in *The New Republic*, November 19, 1945).

Nobility of Labor

The first step in the downfall of France was the thirty-hour week. America cannot become a nation of drones and maintain our future economic stability.

U. S. Senator Harry F. Byrd (Dem. Va.) in opposing the McCarran bill to reduce the hours of 3,000,000 Federal employees from 40 to 30 a week at the same pay (as reported in the

New York Times, September 9, 1945).

Business Semantics

Let us at the same time, be alert against proposals for the establishment of new peace-time controls bearing such alluring but deceptive labels as 'full employment,' 'security,' 'stability,' 'fair competition,' and 'orderly development.' Such euphemistic phraseology is sheep's clothing hiding wolves of collectivism and national socialism.

J. Howard Pew, president of the Sun Oil Company at a joint dinner of the Service Clubs of Chester, Pa. (as reported in the *Wall Street Journal*, Nov. 28, 1945).

Buried Patents Dept.

His title is exclusive, and so clearly within the constitutional provisions in respect of private property that he is neither bound to use his discovery himself, nor permit others to use it.

The public has no right to compel the use of patented devices or of unpatented devices

when that is inconsistent with fundamental rules of property.

The first sentence is from a decision of the Supreme Court in 1896. The second is from another decision of the court in 1909, reaffirming its decision of 1896 (as reported in *Economics of our Patent System*, a book by F. L. Vaughn).

Medieval Authoritarianism

If the State has the right to punish treason with death, the principle is the same that concedes to the spiritual authority the power of capital punishment over the Arch-traitor to truth and Divine relation. A perfect society has the right to its existence . . . and the power of capital punishment is acknowledged for a perfect society. Now, the Catholic (Roman) Church is a perfect society, and as such has the right and power to take means to safeguard its existence.

From the *Tablet*, official newspaper of the Roman Catholic diocese of Brooklyn, N.Y., Nov. 5, 1938 (as quoted by *The Converted Catholic*, December, 1945).

Voice of Technology

Neither Do We

I do not see upon the immediate technological horizon any new development which will give the same vast stimulus to private enterprise as did the railroads, automobiles, electric power, and the radio.

Henry A. Wallace, Secretary of Commerce, in an article in the *Chicago Sun*, December 6, 1945

Energy Certificate Needed

In an economic organization in which goods and services may become available anywhere almost without limit, with less and less labor of muscle or mind, the values put on effort, time, thrift, money and property must change.

If you consider current ideas about wages, prices and employ-

ment, it must be plain already that, as the age of alchemy advances, some other way of distributing the products of industry for consumption or use than by means of money wages, interest, dividends or profits which are proportionate to time, effort, thrift or enterprise, or to collective bargainning, must be invented, for none of the formulas of the machine age fit the frame of the future.

Dr. Virgil Jordan, president of the National Industrial Conference Board in a luncheon address to the Associated Industries of Alabama at the Tutwiler Hotel in Birmingham, November 1, 1945 (as reported in the *Birmingham News*, Nov. 2, 1945).

They're Not All Brass Hats

We didn't fight this war to maintain the status quo in the world. We fought it to get something a damn sight better. If I didn't believe that a strong United States was the biggest contribution we could make to world peace, I wouldn't keep this job five minutes.

General of the Army, and Chief of Staff, Dwight D. Eisenhower, as quoted in an article by Cabell Phillips in the *New York Times Magazine*, December 23, 1945).

Once Burned, Twice Shy

It is strange that certain of our newspapers are playing on old imperialistic themes in some sections of the country and saying that our allies, with whom we won the war, cannot remain together to win the peace. If I were a Russian with the history

that Russia has faced since the revolution, I too would be suspicious of the United States and Great Britain.

Bishop G. Bromley Oxnam, of the Methodist Church, to 1500 members of the Protestant Teachers Association at their annual club luncheon in the Grand Ballroom of the Hotel Astor, New York, Nov. 17, 1945 (as reported in the *New York Times*, Nov. 18, 1945).

Ape and Machine

Our technologies have far outrun both our moral sense and our social organization. Our wisdom about ends does not match our skill about means, and a great gulf has opened between our engineering and our ethics, between our knowledge and our ways of life.

Some of us are still fighting for a social order to which the atomic bomb makes it impossible for us to return. We are more concerned about preserving the contours of the past than we are about discovering the necessities of the future.

Of course, social change is not a painless operation. It involves a break with old traditions and habits, which to many minds seem intolerable. But this is the price of human survival. The question today is not whether we shall slough off modes of thinking that have suddenly become obsolete. The one vital question is whether we can change our ideas and institutions fast enough***.

Raymond B. Fosdick in an article in the *New York Times Magazine*, Dec. 30, 1945.

The Scientific Method

It is the study of science and that alone, which enables us to observe our surroundings clearly, to perceive their interrelations, and to derive valid and useful conclusions concerning them.

It is only through science study that we can acquire that most valuable of mental habits, the scientific approach. The merest beginner in science soon learns that preconceptions, personal bias, and wishful thinking have no place in the laboratory, and that each problem must be approached with an open mind, subject to no influence but that of established fact.

Could that approach be learned by the majority of men and maintained in the affairs of daily life, how many of our political

and social problems would be solved, and how soon the demagogue and political sophist would disappear.

L. A. Hawkins of General Electric Research Department in the *General Electric Review*, August 1945.

The Triple Alliance

We suggest that religious youth look behind the superstition and emotion behind Youth for Christ with its emphasis against science, education and governmental control for a scheme sponsored by reactionary business and political interests to prevent youth from helping to correct some of the social, political and economic ills of our society.

Part of a resolution released by the Midwest American United Youth Conference after its recent meeting at Lake Geneva, Wis. (as reported in the *Chicago Sun*, August 18, 1945).

Tally These Up Too

The American steel industry can today produce in 75 minutes an amount equivalent to its total output in the entire year of 1860. (*Steel Facts*, December 1945.)

A new piece of agricultural machinery, called the Pacific Landplane, is capable of smoothing plowed land at the rate of 4 to 5 acres an hour. The machine is intended for use on irrigated farms, its purpose being to break up lumps and thereby slow down the evaporation of water. The Pacific Supply Co., Los Angeles, manufacturers of the big leveler, claims that its use reduces water needs 5 to 33 per cent, saves labor and maintenance costs by allowing wider spacing of irrigation ditches, and also improves soil fertility.—*Business Week*, May 12, 1945.

High-speed raisins are the latest triumph of electronics in food processing. In California tests, infra-red heat dried raisins in seven minutes, compared to 17 hours by the usual heated-air method. Infra-red equipment costs less, and the fruit retains more flavor and aroma.—*Wall Street Journal*, July 24, 1945.

Hubbellite, a cupriferous cement for surfacing floors, has been found roach repellent, according to investigations conducted at the Mellon Institute, Pittsburgh. The cement was effective against all three species of roach, German, American and Oriental. This finding should be of value to builders of private houses and to food manufacturers, our armed forces, restaurants, hotels and institutions.—*Chemical Industries*, May 1945.

So Wags the World

Fascism (Social Reaction)

vs.

Anti-Fascism (Social Advancement)

By Research Staff of Great Lakes Technocrat

North America

United States

A well organized Nazi underground movement is operating in Chicago and throughout the rest of the United States, asserted Dewey G. Hutchinson, district counsel in Chicago for the Immigration and Naturalization Service of the Department of Justice, in a recent interview. 'We have evidence,' he said, 'that many of the members of the German-American Bund throughout the country organized "singing societies," or joined existing ones, which were not more than subterfuges.'

He said that some of the Societies immediately changed their constitutions to conform to Nazi ideologies. Asked the extent of the underground movement, Hutchinson replied, 'that's hard to tell. There are many thousands of them.' He added that, 'There is no longer any doubt but that the entire movement, both in its open and secret phases, has been and is being directed from Germany. The interview was dated October 15, 1945.'

Spruille Braden, Assistant Secretary of State and former ambassador to Argentina, in an interview recently said:

The ideological and social tensions of Europe, systematically aggravated by Nazism, far from diminishing with the end of hostilities, are now appearing in our own hemisphere, deliberately transplanted here from foreign sources.

He did not elaborate.

P. C. Keith, a top chemical engineer, has developed a method for converting natural gas into gasoline. Diesel oil, alcohol and a dozen other chemical by-products. The method is called the Hydrocol process. It will make gasoline at a price low enough to compete with that obtained from petroleum.

Many years ago chemists developed the method of manufacturing illuminating gas by blasting steam over incandescent coal.

In 1923 the Tropsch-Fisher process for converting manufactured gas into gasoline was developed in Germany. In 1933 the first synthetic gasoline plant was built in Germany. This gasoline was expensive and required doctoring because it had an octane rating of only 40.

Keith visited a number of these plants in Germany before the war. It occurred to him that natural gas might be a better source for synthetic gasoline. Natural gas is composed of 90 percent methane gas combined with ethane, propane and butane. Methane gas is also generated in marshes, sewers and human intestines. When methane is burned in an atmosphere of pure oxygen, two gases result, carbon monoxide and hydrogen. These are the building blocks for synthetic gasoline.

A method was developed for extracting enormous quantities of pure oxygen from the air. In the reaction process, the carbon monoxide and hydrogen from methane combine, in

the presence of a catalyst, to make gasoline and water. Tremendous quantities of heat are generated in the process. The reaction chamber is honeycombed with water tubes. The waste heat converts the water into steam which is used to generate power to operate compressors and other equipment.

A pilot plant was built at Olean, N. Y. It performed as planned. Ten gallons of gasoline a day was produced. Then a larger demonstration plant was built which turned out 10 barrels a day. Work is now complete on drawings for a commercial plant in Louisiana in the heart of the Carthage gas field 40 miles southwest of Shreveport. The plant will produce 5,000 barrels of gasoline per day and 1,000 barrels of Diesel oil, plus 200,000 pounds of crude alcohol. The plant will use 65,000,000 cubic feet of natural gas and 40,000,000 cubic feet of oxygen a day. The gasoline is of 80 octane quality.

It is estimated that the United States has a visible supply of 100 trillion cubic feet of natural gas and an equally large reserve supply. Current consumption of natural gas is about 3 trillion feet a year. If these figures are correct, we have a visible supply of natural gas, at current consumption rates, for about 67 years.

Said chemist P. C. Keith: 'If you are not worried about costs we can make gasoline out of hay or corn-cobs, or even water lilies.' (*Ed. Note:* See how the factor of cost, i.e., the Price System, interferes with technology? In spite of the Price System, however, Technology Marches On ever adding to America's available supply of energy. A salute to the technologist who developed the Hydrocol Process.

Canada

A tremendous scandal is boiling

under the lid in Canada. It involves alleged irregularities in the sale of uranium ore from the Eldorado mines.

The Eldorado mines are on the shores of the Great Bear Lake, 1500 miles north of Seattle, and only 26 miles south of the Arctic Circle. The deposit was discovered in 1930. Until 1940 it was operated by the Eldorado Mining and Smelting Ltd. Its chief product was radium. Eldorado is one of only two known workable deposits of pitchblende, from which comes uranium and radium. The other is in the Belgian Congo. It is operated by Union Miniere du Haut Katanga. Production at Eldorado broke the Belgian world monopoly on radium.

Then a cartel agreement was negotiated between the two, under which the world's market was split on a 60-40 basis. The price of radium was stabilized at \$25,000 a gram. In 1940 the mine at Eldorado was closed down and deliberately flooded. Reasons given were an increasing body of ore and a dwindling market for radium.

In 1942 the mine was reopened under top priority for men and materials, as a part of the Manhattan Project to make atomic bombs. Early in 1944 the Canadian Government bought the property outright. It is alleged that in the intervening period the Eldorado Company diverted uranium from atom bomb uses to make greater profits by secret sales when they learned that the Government was going to take over. Several corporations and 50 persons are under investigation.

Among them is one Boris Pregel of New York, a former sales agent of Eldorado and the Belgian Radium Syndicate. He negotiated the cartel deal noted previously. Carl B. French, Secretary of Eldorado, was arrested

recently on charges that he falsified the company's books and took secret commissions.

Detailed charges have never been made public but it is said that the company diverted uranium to an unnamed 'uranium cartel.' The list of persons being investigated includes Canadian and American names. J. G. Glassco, a Toronto accountant, was appointed by an 'order-in-council' to investigate the charges. He was given wide powers and even authorized 'to use force' if necessary to get the facts.

The Ontario Hydro-Electric Power Commission will begin harnessing the Rapides des Joachims on the upper Ottawa River this spring. The project involves construction of a dam

2,500 feet long and 135 feet high. It will produce about 400,000 horsepower. The project is a part of the rural electrification program of Hydro, which is designed to raise the number of farms in Ontario within reach of electric power from the present 55 percent to 85 percent. The program includes rural distribution lines and the construction of primary and secondary stations. The main dam of the des Joachim unit will back the Ottawa River up to form a lake about 70 miles long and a mile wide. When completed, Hydro will have a total installed capacity of 3,060,000 horsepower. Up to the end of 1944, the total hydro-electric power capacity of all Canada was 10,283,213 horsepower. One-fifth of it has been installed in the last 5 years.

South Of The Rio Grande

Argentina

On November 17, 1945, Colonel Peron's afternoon newspaper *La Epoca* at Buenos Aires came out with a special announcement, which read: 'Argentine Catholics (Roman) must not Vote for the Enemies of Christ.' It stated further that the Catholic Clergy would read a special pastoral letter in every church in the country on the following day.

The pastoral letter read in all churches the next day was signed by Cardinal Louis Santiago Copello and several Archbishops. It warned that: 'No Catholic may become a member of a party or vote for candidates whose platform or principles advocate' separation of church and state, suppression of religious instruction in schools and institution of exclusively lay instruction, suppression of the oath by God and Country, and divorce.

In churches throughout Buenos Aires, women got up from their seats and left when the pastoral letter was read. In the Church of Immaculate Conception in rich Belgrano District, Father Virgilio Filippo openly exhorted his congregation to support Peron for the Presidency. About 30 well-dressed women got up and walked to one side of the church. They began to say the rosary and prayed that 'Father Filippo be saved from this period of spiritual blindness.'

He ordered two men from Catholic Action, each wearing a Peron button, to quiet the women. They refused to be still, then other men joined the first two. They pushed the women out on the sidewalk, with insulting remarks. Father Gallard, an assistant to Father Filippo, appeared at this point. One woman, Eugenia Silveyra de Oyuela, an author of many outspoken articles in the weekly *Antinazi*

told him: 'We come to Church to pray, not to listen to politics.'

Father Gallardo snapped back: 'If what bothers you in politics is a possible dictatorship, you'll have to be silent, because Jesus Christ himself was the great dictator.' Then he added: *'If you want what happened in Spain, you'll get what happened in Spain.'* (Italics ours)

Some of the congregation insisted that the protesting women be arrested. The police were called. One woman berated an officer because he seemed hesitant, 'Are you too cowardly to shoot them down?' The women were hauled to the police station. The commissar dismissed them, saying it was a matter for the Curia to handle, since it happened in a Church. Father Gallardo had gone along to the police station to press charges.

The Parish Board was contacted. They backed up Father Gallardo by saying that he had shown 'great Christian forbearance.' They voted to turn the case back to the police. Police Chief Velasco constituting himself a magistrate under Argentine law, fined three of the women 20 pesos and sentenced them to 6 days in the notorious prostitutes' home, Asilo San Miquel.

Brazil

In the last 10 years Brazil has completed one of the big engineering feats of modern times. This was draining and reclaiming the malaria ridden Baixaida Flumenense swamp-lands that formerly almost surrounded Rio de Janeiro. The lowlands reclaimed total 2000 square miles. This area is 17 times as large as the famous Pontine Marshes near Rome, Italy, the draining of which was the only constructive thing accomplished by Mussolini's regime in 21 years.

A new airplane motor factory has been built in the reclaimed area. Orchards, truck gardens, farms, villages and towns have grown where the mosquito formerly held sway. Brazil has several other projects larger than Baixaida well along toward completion.

In the northwest state of Cerea a dam and road building program is designed to overcome the dustbowl characteristics of that area. In the northeast, in the Sao Francisco Valley area Brazil is getting ready to harness Paulo Alphonso waterfalls. They are said to be a little higher and of more volume than Niagara Falls. In the far south of Brazil it is proposed to build a TVA system to provide power, irrigation and water control for a large area.

Europe

Germany

A subcommittee on war mobilization of the Senate military affairs committee has been investigating conditions in Germany. The committee's report, recently issued shows that a minimum of 75 percent of German industry either escaped any war destruction or is easily reparable. I. G.

Farbenindustrie, a giant chemical combine is 87 percent intact. Colonel Bernard Bernstein, director of the division of investigation of cartels and external assets of the A.M.G. in Germany warned the committee, 'If it is our policy to see that German industrial capacity is reduced, then we must take action now.' Bernard said that although orders signed by General of

the Army Eisenhower had been issued to destroy war plants no Farben plants had been touched.

In Berlin, Russel A. Nixon, deputy director under Bernstein said that A.M.G. authorities in the American zone were 'pampering German industrialists.' He also said that German industries were not being destroyed and that many industrialists were not being arrested in spite of a directive of the joint chiefs of staff. He complained that 'pressure' had forced his division to release from jails a number of I. G. Farben officials recently arrested.

Shortly after V.E.Day the U. S. Bureau of Mines sent four solid fuels technicians to Germany to collect records and do research work on German mining methods. Dr. R. R. Sayers, director of the Bureau recently revealed some of their findings. A radically new type of coal mining machine enabled the Nazis to meet all war-time coal needs as well as normal exports to satellite countries. The machine is called a coal planer. It eliminates the jobs of cutting, drilling, blasting and loading coal.

The device is a plow-like machine and works on the principle of a carpenter's plane. One unit is capable of mining 800 tons of coal daily. The coal planer is only practicable where there is a long wall of coal. Two units are operated in tandem, one facing each way. The device is pulled along the coal face by cables operated from electric or compressed air hoists. As it travels along it takes a 12 inch slice from the lower third of the seam. The upper two thirds of the seam then caves in over the planer and onto the chain conveyor loading trough.

The two unit planer shuttles back and forth along the seam. Each unit has a manganese steel cutting blade and loading conveyor facing in opposite directions. It is said that coal was broken so rapidly with the planer that great difficulties were encountered in keeping up with accompanying work such as timbering, backfilling and hauling the coal away. A coal planer can only be used where the seam is solid coal with no rock partings or dividers to prevent the upper two thirds of the seam from collapsing as it is undermined by the cutting blade.

Asia

China

The government of Chiang Kai-shek maintains a blacklist of American foreign correspondents who have criticized its policies. The list is kept up to date and distributed to Chinese embassies throughout the world.

Among those on the list are Edgar Snow, Mark Gayn, Hanson Baldwin, Harrison Forman, Drew Pearson, Agnes Smedley, Guenther Stein, Raymond Swing, Brooks Atkinson, Sam Lubell, Darrel Berrigan and Harold Isaacs.

The U. S. State Department has proclaimed its avowed policy as being one of relying on American foreign correspondents to be the eyes and ears of the American people. However, there is a blacklist on those who dare to write the facts about the 'incomplete fascism of Chiang Kai-shek.'

About 600,000 Chinese quisling soldiers who fought with the Japanese against their own country have bought immunity from treason by being absorbed into the Nationalist forces to

fight against the Chinese democrats (called communists).

The principle is the same as that employed by Britain in taking the Greek quisling battalions who fought with the Nazis against the Greek partisans and incorporating them into the Greek Nationalist army.

The Chungking press claims that

scores will be settled with the collaborationists some day, after the civil war ends. One correspondent commenting on this wrote: 'When China gets around to court-martialing its renegade Generals and pro-Jap army officers, they will all be wearing Allied campaign ribbons as they step into the prisoner's dock.'

Australia

An industrial expansion program is under way in Australia. Steel production will be stepped up first. Prior to the war steel ingot capacity at Broken Hill was 2,000,000 tons a year. This has been increased by new electric furnaces. Ferro alloy plants, milling machines, heading and forging presses and other new fabricating facilities have been built. A magnesium plant constructed for war purposes has a capacity greater than Australia can use. The Broken Hill group of industries has already exported quantities of railroad equipment to India including assembled wheels, tires, and axles. Other export markets are being surveyed in Malaya, Nether-

lands East Indies, New Zealand and China.

The present program includes four projects:

1. Opening of new mines and construction of a new port on Cockatoo island in northwest Australia;
2. Construction of four 12,500 ton ore carriers at Whyalla;
3. Building of a new battery of modern by-product coke ovens, and new 10 inch rod, merchant bar and strip rolling mill at Port Kemble; Mechanization with Australian-built machinery of the Bulli and Newcastle coal fields. Australia has an adequate supply of iron ore and coal available at home and on nearby islands.

Energy Certificate Needed

'We in America have moved steadily from a technology of manufacture to one of transmutations from an economy shaped by voluntary competitive production to one of compulsory, collective consumption shaped by the powers of the state.

'When work and even mental labor is worth so little or is so unnecessary in industrial production that the distribution of the product cannot be related to employment, the main economic problem probably will be to get the product consumed and the main political problem to

keep the people occupied and amused.'—Dr. Virgil Jordan, President of the National Industrial Conference Board at the 52nd annual convention of the Ohio Chamber of Commerce. (As reported in the *Cleveland Plain Dealer*, December 15, 1945.)

'America is going through a moronization proces.'—Dr. Norman E. Hines, professor of sociology at Colgate University. (As quoted in *The Messenger*, November 1945.)

In the Question Box

By Speakers' Division, 8741-1

Will the use of atomic energy for commodity production change the energy value of units of that commodity? B. R. S.

Not at all. Energy is energy. There is only one kind of energy, whether it is derived from the molecular fission of coal, oil, gas, or wood, from the power of falling water, from the radiation of the Sun, from the movement of winds, from the muscles of man or beast or from the fission of the atom.

Energy is the capacity to perform work. Regardless of the source, or form, from which it is derived it is all measureable in the same units, such as ergs, joules, foot pounds or kilowatt-hours. The energy may be converted from one form to another and the yardsticks by which it is measured are constant and also convertible into each other.

In a system of technological control, wherein physical costs of accounting are used, the cost of a commodity would not be determined by the particular form of energy used in its technofacturing. It would be arrived at from calculations based upon the total amount of all forms of energy available, minus the necessary deductions for maintenance and replacement of machinery, costs of distribution, etc. The amount of resources available for the production of any commodity would be a factor in its physical cost also. The only effect that atomic energy has in this picture is to add to an already abundant supply of energy. You might say there has been a quantitative change, but no qualitative change. Energy is energy.

Would it be easier to put a Technate program in to effect in a socialist country where production is used for all of its citizens, M. E. D.

The putting of technological control into effect in any country does not depend upon the state of its political ideology, but upon the state of its technological development. Obviously, you cannot put technological principles into effect in any country where there is little or no technology. In industrially backward areas, political, business and ecclesiastical methods of social control are used. Technological control is a technical and measureable method of operating a social system. Before this can be done, there must be something to measure. You can't measure natural scarcity. All you can do with it is evaluate it. When an area is gifted with sufficient resources and attains a degree of technological development, making possible the production of an abundance, then technological control becomes practical and not until then. So far, only the North American Continent has reached that state.

How can Technocracy take effect when the ownership of the means of production are in the hands of a few who are strongly entrenched with police, army and navy at their disposal, B. J. G.

I wouldn't worry too much about the police or the army and navy. That is thinking in concepts of the seizure of power. Technocracy has no theory about the assumption of power. Every government rests upon force. In the last analysis that force depends upon common consent. It has been demon-

strated many times in history that when a sufficient proportion of the population develop an urge to go in one direction at the same time, the force of government yields or melts away. This phenomenon does not occur until conditions become unbearable. Applying this to the American social problem, we can say that when the Price System can no longer function, the people will be driven to move.

Let's not delude ourselves with vain, political conspiracies about seizing power or effecting a violent overthrow of the system. If attempted and carried far enough, such action will result only in the great majority of Americans going down in the ruins of the system they are trying to overthrow. Modern technology is easily destroyed. Allow that to happen and we won't have any social problem to worry about for a long time, except natural scarcity. And most of us won't be left alive to worry about that.

The American social problem is how to preserve our technology and effect a peaceable transition into the New America. It can be done only if a sufficient number of Americans are correctly informed about the physical factors which are destroying the Price System. When this occurs, these citizens can then give the proper direction to the inevitable mass movement of the population, so that we can escape social chaos. That is what Technocracy is doing. The trouble will not be with the 2 percent who control society, but with the 98 percent. As many of them as possible must be correctly informed. What are you doing about it?

How do you expect Technocracy to come into operation? What is the first movement in the transition? T. G. W.

Regarding your first question, we will

state that you are evidently laboring under misconceived political concepts about 'taking over,' etc. Technocracy does not expect to ever come into operation as a minority group in control of the social system. There will be a major social change on this Continent wherein technological principles will take the place of Price System methods of social control. That is something different. Technocracy has stated many times that when a technological control is installed and in operation, the Organization of Technocracy Inc. will be disbanded. Technocracy is merely acting as a bellwether to point out the road to the New America. When we get there, the Technocratic self-assignment will be completed.

In regard to your second question, the first movement in the transition **M U S T** be the installation of *Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None*. It is absolutely necessary for the dual purpose of maintaining social order and working out a peaceable transition into technological control. There are no qualifications to this necessity. It is supremely important.

If we do not install Total Conscription first, the breakdown of the Price System may turn into a social debacle and end in general chaos. If we try to fight it out, then even God won't be able to help America. We are not living in the ages of 1776, 1789, 1860 or 1917. North America is in the Power Age. In the past social changes and changes in social control could be effected by violence only. In America, now, social change can only be effected peaceably. Any group advocating violence as a solution of social problems is guilty of treason. Total Conscription is the only sure preventive.

TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

★ Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association either in North America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Victory Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1918-1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life, Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this continent. Membership is open only to North American citizens. Aliens, Asiatics and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic North American—you are welcome in Technocracy.

**Great Lakes Technocrat,
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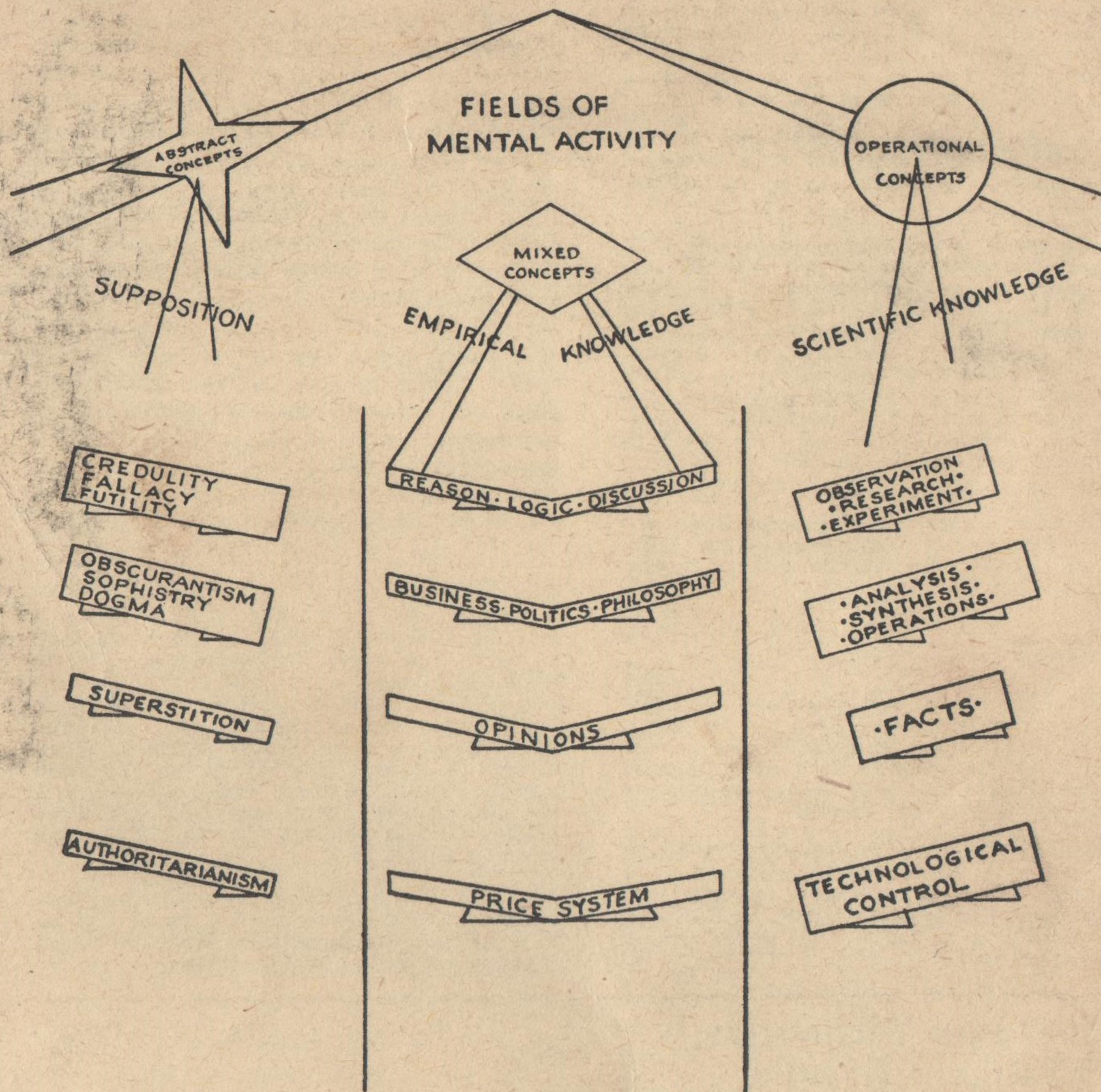
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A concept is an idea. Nearly all concepts fall broadly into three groups. Abstract Concepts have no physical properties in their makeup. They come and go, amorphously, in that fictitious realm of the imagination. Operational Concepts have physical content. They are derived from things and events in our physical environment. One may perform experiments to show their reality. Mixed Concepts are a hash of abstract and operational ideas.

Abstract Concepts beget a body of apriori assumptions which may be defined as Supposition. Since Knowledge implies acquaintance with facts the ideology of Supposition is not Knowledge. It is an imaginary nothing. Mixed Concepts beget a compound of these imaginary nothings and some acquaintance with fact. This adulterated hash may be called Empirical Knowledge. Operational Concepts beget Scientific Knowledge. This is true Knowledge.

Supposition spawns a litter of maleficent frauds. Some are shown on the chart. The past was very rich in this moonshine. Empirical Knowledge breeds a profusion of counterfeit glitter. That is the Price System today. Scientific Knowledge parades forward with an army of facts. The future belongs to it.

The point of this is that in any projected solution of the American social dilemma today every attempted application of Abstract or Mixed Concepts must result in, first, futility, then a new Dark Age of political-industrial-clerical Authoritarianism. We must apply Operational Concepts to the American problem. It is our only hope. Anything else is Continental Treason.

Photo: Courtesy Bristol Brass Corporation